

## NC GreenPower Solar+ Schools Frequently Asked Questions

Please visit our website for additional information:

<https://www.ncgreenpower.org/faq/#solar-schools>

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### Application FAQ

**The application asks for % of population served. We have these data for our county school system but not at the school level. Will this suffice?** School level is preferred, so if you do not have that information, you may skip the question.

**Section 2, Question 8 of the application requests “percent of population served.” Served in what way?**

This question is asking: Of the student population in your community that can attend your school, what percentage actually attends your school?

**Do you accept charter or private school applications?** Public and private K-12 schools in North Carolina that are exempt from federal income tax under section 501(c)(3) or 170(c)(1) of the Internal Revenue Code are eligible to apply for the Solar+ Schools grant. This includes charter, magnet, early college —

any public or private school type. However, the additional State Employees' Credit Union Foundation grant is applicable only to public schools.

**I am the education director at a 501(c)(3) nonprofit educational facility. We serve between 75 and 100 schools during a typical school year. The schools who visit us for a field trip come from all over North Carolina, with a greater percent being public schools. I would like to know if we would be eligible for your Solar+ Schools grant.**

At this time, our grant program is only approved to install on K-12 school campuses. However, we do hope in the near future to expand the program to other nonprofits. Because we are overseen by the North Carolina Utilities Commission, we need approval by their staff before making any changes. We will be sure to let you know if this goes through. In addition, you can sign up for email notifications about our Solar+ Schools program here: <https://www.ncgreenpower.org/solar-schools-pilot-sign-up-for-email-updates/>.

**Our school is under design now and will begin construction later this year, so only some of these application questions are applicable. For example, we don't know the total enrollment or number of students on free/reduced lunch, etc. Should we estimate these, or leave them blank?**

Yes, please provide a best-guess answer. We can confirm numbers after receipt of your application, if needed. Also indicate in your application when construction is expected to start and end.

**If our school was selected for your grant, would your organization provide contractors to install the panels or would we need to find a contractor who would do this for us?**

Our staff will manage all aspects of the solar construction process. Once an installer begins work at your school, they will work with the school facilities staff directly; however, we will stay in the loop to manage the project until it is fully completed, inspected, and owned by the school.

## Fundraising FAQ

**How much money are schools expected to raise?** School fundraising goals will be fixed at one of three levels: \$6,000, \$9,000, or \$12,000. To estimate your school's fundraising goal, [download this Excel file](#).

**Can we apply for small community-based grants to meet part of our fundraising requirement?**

Yes! You may raise your funds in any legal manner you wish. Bake sales, car washes, BBQ dinners, grants, etc. — anything legal is fine with us.

**Can you provide additional information about the State Employees' Credit Union (SECU) Foundation funds? Do they have an application process, selection criteria, or priorities of any sort? And if a school is awarded an NC GreenPower grant, at what point do we learn of an award from SECU?**

**[Answer for 2020-2021]** Selected public schools who are successful in raising their portion of the funds may receive a grant between \$10,000 and \$20,000 from the SECU Foundation to increase the size of their solar array from 3 kW to 5 kW. This is not a matching grant, and there is no separate application. We will let schools know if they have been selected by SECU when they are awarded their Solar+ Schools grant.

**If there are large donors to a Solar+ Schools campaign, are there any restrictions against recognizing them by, for example, placing their logo on the system or dashboard or giving recognition in print materials?**

We do have general guidelines for appropriate donor recognition with some higher-level contributors being recognized by name (not logo) on the sign installed on the solar array. Here is a [photo of a sign](#) installed at an existing school.

**Besides the campaigns page on <http://my.ncgreenpower.org> is there any other fundraising support for the Solar+ Schools grant, such as planning and organizing fundraisers?** We will assist in marketing fundraising campaigns launched on [My.NCGreenPower.org](http://My.NCGreenPower.org) through social media and at events. We will also provide the schools with a fundraising flier, an A-frame sign to display at events, and various other tools to assist with the fundraising efforts. However, we do not have the staff capacity to plan or organize individual fundraising events for schools.

**Can the Duke Energy solar rebate be used as part of your funds and/or ongoing O&M?** Unfortunately, no. Schools that participate in our Solar+ Schools program are not eligible for the Duke Energy rebate and must raise funding for their portion as well as the operations and maintenance funds. However, according to the Duke Energy filing, schools that qualify as a nonprofit ([an organization or association recognized by the Department of Revenue of tax exempt pursuant to G.S. 105-130.11\(a\) or any bona fide branch, chapter or affiliate of that organization](#)) and install their own solar PV systems may apply for the rebate.

**How will the money that our school plans to fundraise be used?** The average construction cost of each solar installation (which includes all equipment and installation costs) is about \$28,000 per school; there are also about \$10,000 in additional expenses for project management, engineer inspections, teacher training, the STEM curriculum, and other benefits that are covered by NC GreenPower donors. The

construction cost is shared by the school, NC GreenPower donations, and the State Employees' Credit Union Foundation, if applicable. Included in school fundraising goals is a \$2,500 operations and maintenance fund that will be returned to the school upon completion of the project.

**What if our school does not raise the total contribution by the due date?** Your school will still “own” any funds you raise, though they can only be used for the relevant expenses noted in the contract. The school will not be obligated for any remaining balance due, should for any reason you do not reach your goal. NONE of our schools (some of which had to raise \$13,000-\$19,000) who have fundraised since 2015 have failed. All have met their goals, so we feel very confident that you will also be successful!

**Regarding the fundraising, the agreement talks about what happens if more money is raised than required. Wouldn't fundraising just stop at that point?** A small percentage of our schools raise more than their goals, whether from multiple large sponsors or ambitious fundraising team members who share with the public and get more donations than expected. We state in the contracts that the schools will still have access to the funds later. We generally reach out to those schools the year following the installation to purchase additional solar or energy learning tools/kits with the excess funds.

## Data Monitoring and Design Plans

**Data monitoring and design plans:** The installer will present the school with a full design package that will include engineered designs and all required documentation. We have a VERY rigorous and detailed list of requirements we ask for by our installer. The data monitoring equipment (weather station and sensors) is part of the inverter system that is included with the solar installation and will be installed on or near the array where appropriate and depending on local and utility requirements. There are no additional plans needed or expenses related to this component. Data will be sent to an [online portal similar to this one](#). Teachers at your school will be given admin access to download the data for use in their classroom activities.

## Curriculum FAQ

**Where is the training held for the teachers from each awarded school? How long does it last?**

The curriculum training is held at a site that is mutually convenient for all schools receiving grant awards, so its location will depend on who is awarded. The training is a full day, and food/refreshments

and teacher materials are provided. *Update for 2021: NC GreenPower is providing a virtual training session due to the COVID-19 pandemic.*

**Could you give an idea of the timeline of the teacher training? If an application is submitted in January 2022 and accepted that April, would it be summer or fall of 2022?** Training is scheduled for the spring of the following year. For example, schools who are accepted in 2022 will fundraise from May-September of that year, and curriculum training will be held in March or April of 2023.

**Is it possible for new teachers to attend future trainings to get up to speed with the curriculum? How long can the kits be expected to last, and can they be easily replaced?** Absolutely — and we plan for that! We reach out to previous years in the spring to encourage schools to have teachers attend our sessions. There may be a nominal fee for those subsequent trainings, though we cover all expenses for the first-year training. We are also working on a networking platform for all schools to interact with one another. We email school principals and teachers at least once per year to ask for feedback and keep our contact list current.

The kits provided include both reusable and consumable components. Replacement consumables can be purchased by the school from NEED.org for \$40: <https://shop.need.org/collections/hands-on-kits/products/energy-from-the-sun-kit?variant=4975309316>.

**How will my school see their solar data? Where can I see examples of the production data from other schools?**

Data from your school's solar array is available via the internet and may be displayed on any computer, display monitor, phone or smart device with internet capabilities. Visit our website to find links to each school's public portal page: <https://www.ncgreenpower.org/solar-schools/#2020-schools> (currently 2015-2020 schools are showing live data).

**Our fundraising team is wondering if we should aim for \$15,000 to help pay for extra solar activity kit supplies. Do you have an estimate for the cost of additional supplies? We will have almost 1,200 students next year, five or six classes in K-5 and four classes 6-8.**

Your school will receive one set of NEED curricula per grade level from NC GreenPower, included with your grant. Each kit includes a Teacher Guide, a class set of 30 Student Guides, and the materials necessary to conduct the activities. You can visit <https://shop.need.org/collections/solar> and look for the additional consumables and supplies costs (not very expensive for most).

## Permitting and Licensing

**Who handles all the permits?** All permits and licenses directly related to the construction will be managed by our installer, NC Solar Now. We have had some instances in the past with school systems/cities/towns/counties where additional processes or applications were needed that required assistance from the school to complete, but we have not asked schools for additional funding related to permitting.

## Specifications & Maintenance

**Can you provide any guidance/recommendations on the maximum recommended distance from the proposed installation site to the nearest electrical meter?** For the purposes of the application, we are looking for each school to have given some thought to a prominent location and its proximity to an electrical connection. We prefer the installation be within 100 feet of an electrical panel to keep expenses down, though each site will differ. Our engineer will assist the selected schools with narrowing down their options once on-site.

**What is the actual size and height of the solar array?**

While the configuration of panels on each array may differ, the general height of the array is the same. The pole is about 13 feet tall, the lower edge of the solar panels will be at least 10 feet from the ground on the lowest end, and the 12 panels together measure about 21 x 14 feet. The system has a very small 4-foot-round footprint for the concrete pad.

**My school has a space that would allow for the solar array to be installed near our garden to provide power to the garden and athletic fields. Would this be possible to set up as a standalone system, or would it need to be connected to the grid?** Our program is currently approved for, and has historically only installed, grid-tied arrays. While it would be possible to do a standalone/off-grid array, some aspects of that construction (i.e., batteries or panel construction) would be out of the scope of our program, and the responsibility would fall on the school to complete. Additionally, the cost of installing a grid-tied array is lower than running your garden or athletic fields solely off the solar array.

On the positive side, the 5-kW array would likely cover most of the energy drawn from the garden and some of the energy used by the athletic fields. It would be a good learning opportunity for students to

understand how to calculate energy consumption, loads, solar production, the loads/energy consumption negated by the array, and how much energy is used.

**What is the payback period for the project through energy savings?** We estimate the energy savings for each school to be roughly \$650 – \$800 per year, depending on utility electricity rates. Our 5-kW solar array will typically generate 7,000 to 8,000 kWh per year. So if your electric utility charges \$0.10 per kWh, you could expect savings of \$700 to \$800 annually.

**There are a couple of places in the application that ask about having staff that could be trained to provide operations and maintenance (O&M) of the solar array and monitoring equipment. Are you seeking teachers and/or custodial staff for this maintenance, or is a licensed electrician also needed at the training? What does the system maintenance involve?**

We do not require technical staff to attend our O&M training because O&M for solar PV is fairly easy. We need at least a few people at your school who are capable of simple maintenance to:

- Check the online system on a regular basis to ensure the components are plugged in and sending data through the IT channels
- Keep the solar modules free of debris and unshaded

In other words, we need people to make sure the system is in good operating order. For curriculum training, we do require that teachers attend, but O&M can be handled by anyone at the school as long as the system is checked often.

**How often does the system need attention if most problems can be solved by a teacher or layperson, and how long can the \$2,500 maintenance fund be expected to last? Our concern is about taking on something that requires more attention than the school and parents can handle.** We do not expect maintenance to be an issue/concern for schools. There is zero maintenance on the weather station components and the inverter, other than keeping them clear of leaves and debris like you would with the solar panels, though we generally do not install the array near trees. The data link may at times disconnect; we have a handful of schools who have issues one or two times per year and some that have a steady connection with no interruptions. If a disruption occurs, the school admin will receive an email and we will alert the school to the issue and contact the installer on your behalf (if necessary). It's usually either an internal IT issue that the school fixes or a component issue for the installer to solve. We have not had any of our schools since 2015 use their O&M funds that we know of.

**Does our school need to modify its insurance policy to cover the panels?** Once the installer issues the interconnection agreement with your local electric utility, they will need to have your Certificate of Liability Insurance available as well as a copy of your electric bill. When the solar PV installation is

completed, NC GreenPower will donate the system to the school. At that time, we will remind you to notify your insurance company that your school will become owners of this solar installation so your policy is updated accordingly.

**In the contract where it talks about additional visits by the installer at the request of the school, should that happen, would the mileage costs be at the standard federal rate?** Our cost from the installer is listed in our contract as: “will be calculated by using the most direct route (shortest) from Installer’s Raleigh address to the applicable school, where mileage will be paid at a rate of \$1.00 per mile per visit.” NC GreenPower would pass this cost directly to the school with no markup. The installer anticipates a certain number of visits per project, and the schools are only charged if the number of visits exceeds those expectations, by the request of the school.

**On page 1, where it says, “Only after a suitable site for the PV System has been agreed to by both NCGP and School . . .” Who from NC GreenPower agrees to the site?** The solar technician from NC GreenPower and the installer would recommend an appropriate and prominent site, taking into consideration any requests from the school. Staff will do our best to come to a conclusion that is acceptable for all parties involved.

**At what point does the school own the system? On page 2, it states, “Upon successful completion of all its obligations under this agreement, and completion and final certification of the PV System, School will own and operate the PV System installed at the Location...” but in Question 7 on page 5 it says, “School further grants NCGP a perpetual, irrevocable, royalty free, transferable right and license to display, copy and distribute data and reports available from or generated by the PV System on NCGP’s web site...” Could you clarify?**

The school owns the physical installation following the completion of construction and subsequent inspection by the NC GreenPower technician. We only request access to the online solar output data so that we may share it with the public on our website, as we do with Athens Drive High School here: <https://www.ncgreenpower.org/solar-schools/#2018-schools>.

**In reviewing the agreement for the Solar+ Schools grant, a question has been raised about number 7, the cellular connection (on page 5 of the agreement). Do our schools require a cellular connection? If so, is it true that the school would have to agree to pay the second 12 years of cellular connection? Could you say more about this requirement?**

We added this statement after some of our previous schools insisted on installing the array at far away locations that exceeded the recommended distance for the communications cable in order to bring the data back to the school building. The only solution to have a stable data connection at long distances



would be to install a cellular modem at the array to ensure the students can receive the educational weather station and energy data. The cost for the first 12-15 years would be included in our installation, and the subsequent 12-15 years is estimated to be less than the \$2,500 operations and maintenance refund, around \$800-\$1,000 total. We have yet to install a cellular modem, so we don't have a firm price or contract length to provide at this time.

**Maintenance:** NC GreenPower offers a 5-year warranty on the installation from the installer. In addition, each school will receive a \$2,500 refund to hold in an earmarked account for, unexpected, operations and maintenance costs that may occur after the original 5-year warranty ends. To our knowledge, none of our schools since 2015 have had to use these funds. At the conclusion of construction, our installer will hold an on-site maintenance training with anyone that the school wishes to have in attendance.

Other than keeping the solar panels clear of debris, dirt, or pollen, there should not be any significant maintenance on the system. They are designed to operate with little to no issue for 10-20 years, and the panels are expected to produce at a high efficiency for up to 30 years. When we receive an error email from the operating systems at one of our schools, we alert the installer to the issue with the component, and they take care of it, within their warranty. We often have issues with internet connectivity and the data sensors sending the info to the website, but we haven't had any hardware issues that we know of.

Our contract does not list any maintenance requirements, so while we hope the system will be used for decades, be issue-free and be a hands-off piece of equipment for your maintenance staff, it would be the school's responsibility to address any issues that fall outside of the warranty. For anyone awarded in 2021, that warranty would begin in Q2 or Q3 2022 and end in 2027. But NC GreenPower has no legal footing on which we would require a system to be fixed or maintained.

If you have a question that is not answered here, please contact us via email at:

[solarschools@ncgreenpower.org](mailto:solarschools@ncgreenpower.org) using the subject line:

“Solar+ Schools question – [insert school name].”