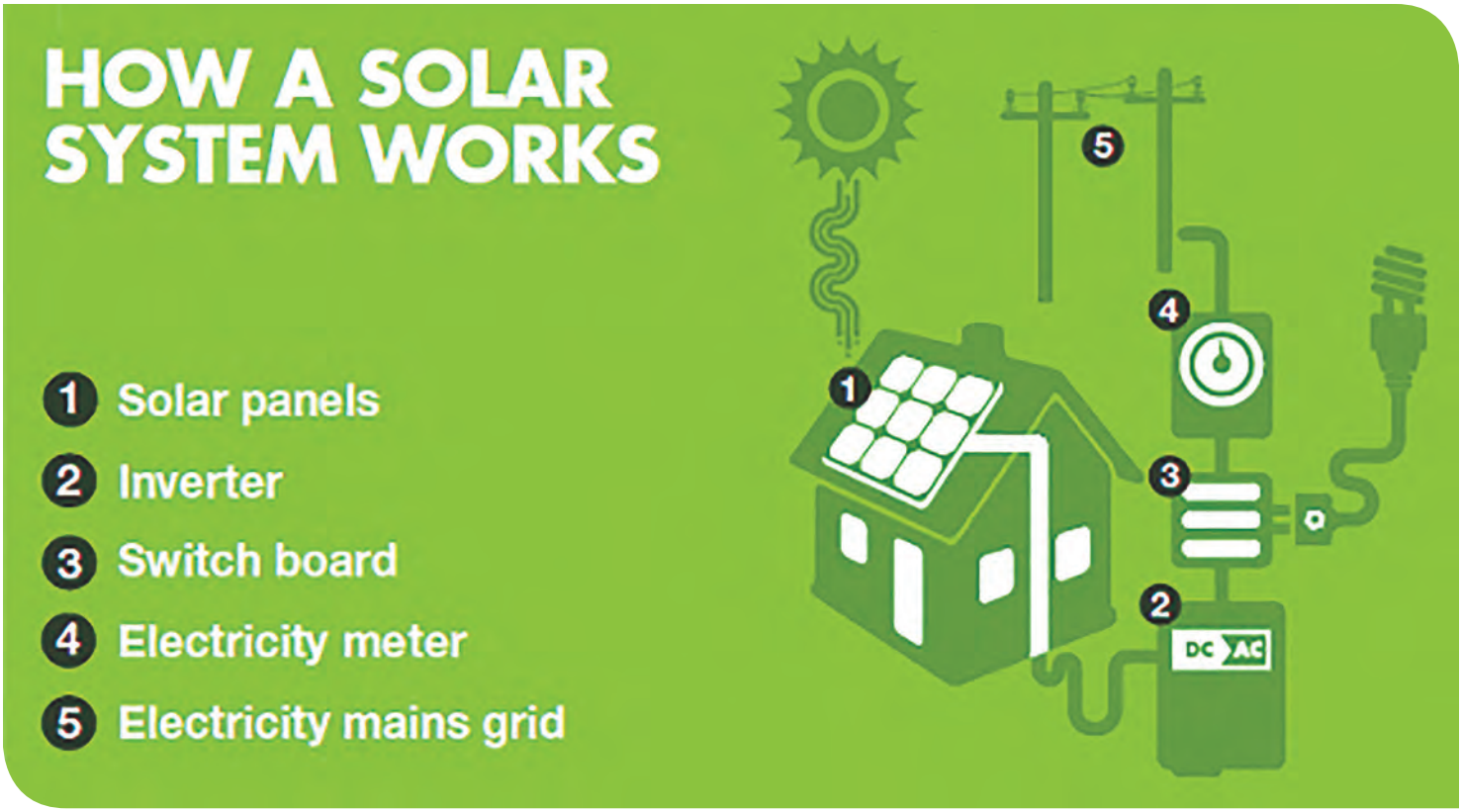

Making the Best of a God-given Gift

Muslim communities can proactively help safeguard Earth by using solar energy technology

BY THE ISNA GREEN INITIATIVE TEAM

"THE GREEN MASJID PROJECT" BOOKLET, AVAILABLE ON ISNA's WEBSITE, PROVIDES INFORMATION ON HOW TO CONSERVE ENERGY BY IMPLEMENTING THE NECESSARY, AND RELEVANTLY SIMPLE, STEPS.

Most American mosques/Islamic centers operate on limited budgets; however, except a few, they have not fully utilized the God-given option: solar energy.

God tells us: "And He subjected for you the Sun and Moon, continuous in orbit, and subjected for you the night and day" (14:33). Just try to imagine life on this planet if the Sun, a divine mercy and crucial source of energy for all of creation, wasn't moving in its prescribed orbit.

God has appointed humanity as caretakers and protectors of this abode. The negative side effects of overusing fossil fuels have been universally felt, as can be seen, for example, either directly or indirectly in the excess carbon dioxide, increasing temperatures, and rising sea levels. The energy that comes from the Sun, however, can be utilized in numerous ways and is cost-free at the source.

Muslim communities can play a crucial role in confronting this major challenge and thereby ensure a brighter future for everyone. The ISNA Green Initiative Team has been promoting the adoption of environmentally friendly practices in our institutions and daily lives both as the need of the hour and as a religious obligation. The "The Green Masjid Project" booklet, available

on ISNA's website, provides information on how to conserve energy by implementing the necessary, and relevantly simple, steps.

Even small steps can conserve some energy and thus reduce the energy bill, as well as the carbon footprint, in the long run. Improving insulation and using LED bulbs, lights with sensors, energy efficient heating/cooling systems and appliances, along with smart thermostats, are also helpful in this regard.

The unwanted byproducts of fossil fuel extraction and usage create air and water pollution and release huge amounts of greenhouse gases into the atmosphere. The best way for mosques/Islamic centers to help counter this is to install solar panels that, instead of creating various emissions, produce clean, renewable energy from a source that requires no locating, excavation, transportation or combustion.

Solar panels absorb sunlight with photovoltaic cells, which generate direct current (DC) energy and then convert it to usable alternating current (AC) energy via inverter technology. A solar inverter takes the DC electricity from the solar array and uses it to create AC electricity. Inverters, which are like the system's brains, also provide ground fault protection and system stats, including voltage and current on AC and DC circuits, energy production and maximum power point tracking.

On warmer days the excess energy goes to the main electric grid, and on colder days the systems operate from the grid line. For an optimal system there is no net usage of the grid's electricity. Although manufacturing solar panels is a high-tech process, the installation is very simple and system maintenance is minimal.

Moreover, they are cost efficient. In fact, the cost of solar energy panels has dropped significantly. Their average price dropped more than 70 percent between 2010 and 2017 and continues to drop even further (https://www.seia.org/solar-industry-research-data). A moderate upfront investment can reduce the electric bill significantly and, in many cases, generate a profit, protect against rising energy costs and reduce carbon emissions. The U.S. Department of Energy is leading the charge on reducing soft cost.

The federal solar tax credit, also known as the investment tax credit (ITC), allows you to deduct 30 percent of the cost of installing a solar energy system from your federal taxes. The ITC applies to both residential and commercial systems, and there is no cap on its value.

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Once the panels have been installed, the savings can be utilized for meeting the community's other needs. In fact, many state grants for renewable energy are available to non-profits for partially covering the cost. Information is available at https://www.bing.com/news/search?q=State+Incentives+For+Renewable+Energy.

Like any other development, solarizing also has its startup and maintenance costs. Take the case of the Bridgeview, Ill.-based Mosque Foundation. In 2008, with the help of a grant from the nonprofit Faith in Place (https://www.faithinplace.org), it became the country's first solar energy powered mosque.

The Islamic Center in Evansville, Ind., raised the funds by requesting each family, or a group of several families, to pledge $1,000 during a one-year period. Realizing the project's environmental benefit, the community enthusiastically donated more than was needed. In the first year of operation, the solar panels generated about 100 percent of the required energy. The estimated total installation cost will be paid off in 10-12 years, and the panels' estimated lifespan is 25-30 years.

Among the ways of financing such projects are individual community members pledging the cost of one or more panels, crowdfunding, forming a for-profit company that owns the solar assets and sells the electricity to the congregation, solar lease financing (the solar installation company pays for installation and maintenance and the congregation pays a fixed monthly price over the course of the lease), as well as signing power purchase agreements. In this case, the solar power company installs and maintains the system, and the congregation buys the electricity at an agreed-upon monthly price.

Of course, before doing so the entire process must be thoroughly evaluated. The best places for panel installation are the building's south or southwest roof — provided there are no trees blocking the sunlight — and at ground level facing south or southwest. Information on the expected monthly electric bill for a year as well as how to use a solar installation calculator can be found at https://www.solar-estimate.org and similar sites.

Solar inverters, as discussed above, are a key part of the solar panel system. Vendors provide three types of inverters: string inverters, microinverters and power optimizers. As most vendors offer just one type of inverter, purchasing the appropriate one involves carefully comparing vendor quotations — get at least two or three quotations — for the price varies considerably even for the same type of inverter. Normally, the panel warranty offered covers 25 years and 10-15 years for the inverters and service. Given this reality, you should also try to negotiate a 25-year warranty for the whole system.

Installing solar panels will reduce fossil fuel consumption, reduce the carbon footprint and, in the long run, help the environment and enable more money to be directed toward other useful community projects. The most important aspect of this undertaking, however, will be to fulfill partially our religious obligation as the caretakers of this planet.

ISNA's Green Initiative team will be glad to help your mosque/Islamic center install solar panels. Please contact us at isnagreenmasjid@gmail.com.

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