MPBC Solar PV System FAQ's

September 2014

1. **Where is the system located?** The system is located on the flat roof of the corridor between the Education Building and the Cornwell Center. There are 20 solar photovoltaic panels mounted on racks similar to the picture on the right. The racks do not penetrate the roof but are held in place by ballast.

The red arrow shows the location of the panels, between the Education Building and Cornwell Center. The panels are mounted similar to photo on right, angled toward the south facing the sun. That would be the upper right corner of the picture of the Cornwell Center.

2.**What does it do?** The 20 roof mounted photovoltaic (PV) panels convert sunlight into electricity. They are connected by wire directly into our the Cornwell Center electric panel. The electricity they produce replaces part of the electricity we buy from our utility. Our system does not have battery backup so it only produces electricity when the sun is shining. Fortunately, that is when electricity is needed most (for air conditioning).

3.**How much electricity will it produce?** The system will be rated at about 5 kilowatts (kW). On an annual basis it will produce only about 2% of the entire church's electrical usage. It's a small system, but it can be added to easily over time. It should produce about 6,200 kWh of electricity per year.

4. **How did the system cost the church?** The approximate $37,240 purchase price was funded by a $18,620 renewable energy grant from the NC State Energy office and from an $18,620 gift from the Myers Park Baptist Church Earthkeepers and other environmentally-oriented members of the congregation. The system would cost considerably less today, as prices of solar panels have fallen.

5. **How long will the system last? What maintenance is required?** The panels are guaranteed by the manufacturer for 25 years. There is no regular maintenance required. In dry, dusty conditions the panels can be washed to improve performance.

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6. **Why solar?** Several reasons:

   - The US Dept. of Energy reports that solar is one of the cleanest forms of renewable energy. From an energy standpoint, solar panels pay for themselves (energy and materials needed for production and end-of-life recycling) in less than 4 years. For their remaining life (minimum 21 years) the energy they produce has no adverse impact on the environment.

   - A solar PV system makes the perfect centerpiece for an educational outreach effort - one of the major goals of this project. Part of our agreement with the state for the grant is that we will conduct periodic eventss on energy related topics. People can tour our system and we have an educational display in the Cornwell Center. Since the installation of the system about a year ago, over 15 other churches have toured our system and several are now installing their own. We've conducted mulitple energy-related educational events.

7. **From an energy savings standpoint, wouldn't it be better to fund energy efficiency projects?** Myers Park Baptist has a comprehensive energy efficiency program under way. The donors to the solar project felt we need to support both our church's energy efficiency projects and address the issue of where we get the energy we do use. Much of the electricity we use in NC comes from coal-fired power plants which have a host of negative environmental consequences. One example: the NC Dept. of Health, using data from the Centers for Disease Control in Atlanta, says that over 13,600 children are born each year in NC with enough mercury in their system to put them at risk of learning disabilities. The majority of this mercury comes from coal-fired power plants. In addition, coal miners die and mountains are destroyed (450 already in WVA alone) to get the coal we use. Finally, burning coal (and, more recently but less so, natural gas) is a major contributor to global warming. The donors to the solar project feel there is a better way. Our church is now addressing both energy efficiency and how we produce the energy we use. This is a vital part of our Care for Creation.

8. **Will the church save any money from the solar system?** Yes. The system is a gift to the church supplemented with a grant from the state, costing the church nothing. In addition to the environmental and educational benefits which we feel are most important, the church's electric bill will be reduced by an estimated $600 in the first year. Savings will rise to between $1,300 and $3,300 a year towards the end of the system life, assuming an inflation rate for utility costs of between 4 and 8%. That's between $22,000 and $38,000 the church will save on its electric bill over the 25 year life of the system. System performance to date indicates we will exceed these estimates.

Our system has already prevented 12 tons of greenhouse gas (CO_2) from entering the atmosphere!

Thank you for your interest in this project!

"We need to be the change we wish to see in the world." - Ghandi