Corpus Christi's Solar FAQ

1. **Why did Corpus Christi decide to go solar?** In 2015, the Vatican released Pope Francis's encyclical entitled Laudato Si (*Be Praised*): On Care for Our Common Home. It was a comprehensive summary of the environmental and social ills facing humanity. The pope's pastoral letter called on all people of conscience to take up climate change as a moral imperative. Corpus Christi's leadership learned that solar energy was a way we could address our parish's carbon footprint in a substantial way and be a good steward of the parish's funds by lowering our electricity cost. It was a win/win.

2. **How big is Corpus Christi's solar array?** the array is at the SW corner of the property – at the south end of the Giving Garden - and consists of 236 panels producing 325 watts DC each (at peak sunshine). This totals 76,700 watts or 76.7 kW. The array will produce about 91000 kilowatt hours (kWh) of electricity per year, which is about 60-70% of CC annual usage (130,000-150,000 kWh/yr). The array's output would supply the electricity needs of about eleven average Minnesota households.

3. **Why not put the solar panels on the church roof?** Mounting the panels on the church was not feasible due to the roof design and would have been a more expensive option on the school buildings than ground mounting. Also, the array is expected to last considerably longer than the current roof so would have needed to be removed as some point.

4. **Will we have to mow the grass under the panels?** The array is fenced in and pollinator-friendly vegetation will eventually be planted between and around the rows of solar panels so mowing frequency will be almost eliminated. As an added bonus, our pollinators will help the bees at the nearby U of M Bee Lab.

5. **How much did the array cost?** The array is valued at $162,000 but was funded by Apex Efficiency Solutions, CC's partner in this project. Apex owns and maintains the array and its energy production. CC's only up-front cost is a Power Purchase Agreement (PPA) that required pre-payment of 42% of the array's annual output for 20 years ($76,230).

6. **Did Apex build the array?** No, the contractor for that built the array was Cedar Creek Energy.

7. **How much does Corpus Christi pay for the electricity being generated by the array?** CC will pay $0.10/kWh for the array's output in the first year, which is significantly lower than our current electric rates. The solar rate will raise a fixed 2% per year while Xcel's electricity rates have historically risen 3-5% per year.

8. **Does the array help Xcel keep up with demand on hot days?** Yes, the array will be an "energy producer" on sunny and hot peak cooling days so it helps Xcel avoid starting up expensive power plants at these peak times. This provides additional savings for CC by increasing our "Capacity Credit" & "Demand Charge Holiday" from Xcel.

9. **What happens when the array is generating more power than Corpus Christi's buildings are using?** The excess electricity is sent to the grid and CC's electric meter on the building will turn backwards giving us full credit for power at Xcel's regular rate. This is called "net metering at grid parity".

10. **What happens when our buildings use more power than the array is producing?** CC electric meter will turn forward and CC will be purchasing using power from Xcel the regular rates. In the likely event that CC uses more electricity than the system generates over a year, CC will have purchased electricity from Xcel at regular grid rates. In the unlikely event that CC uses less electricity than the system generates over a year, the excess power that was sent to the grid will become a payment from Xcel to CC. Since CC is liable to buy all the power produced by the solar array, if CC

doesn't use it all, the excess is "sold" to Xcel and CC pockets the difference between the lower PPA rate and Xcel's higher rate.

11. **What happens at the end of the 20 year PPA?** CC buys the array from Apex for $1 and takes full ownership. Cash flow should double at that point as the cost of electricity goes to zero.

12. **What are Corpus Christi's savings over time?** Savings over 25 years is estimated to be about $250,000, 30 years: $350,000, 40 years: $600,000.

Corpus Christi's Electricity Cost per Kilowatt Hour over time: