Solar PV on KVCC Sanctuary Roof

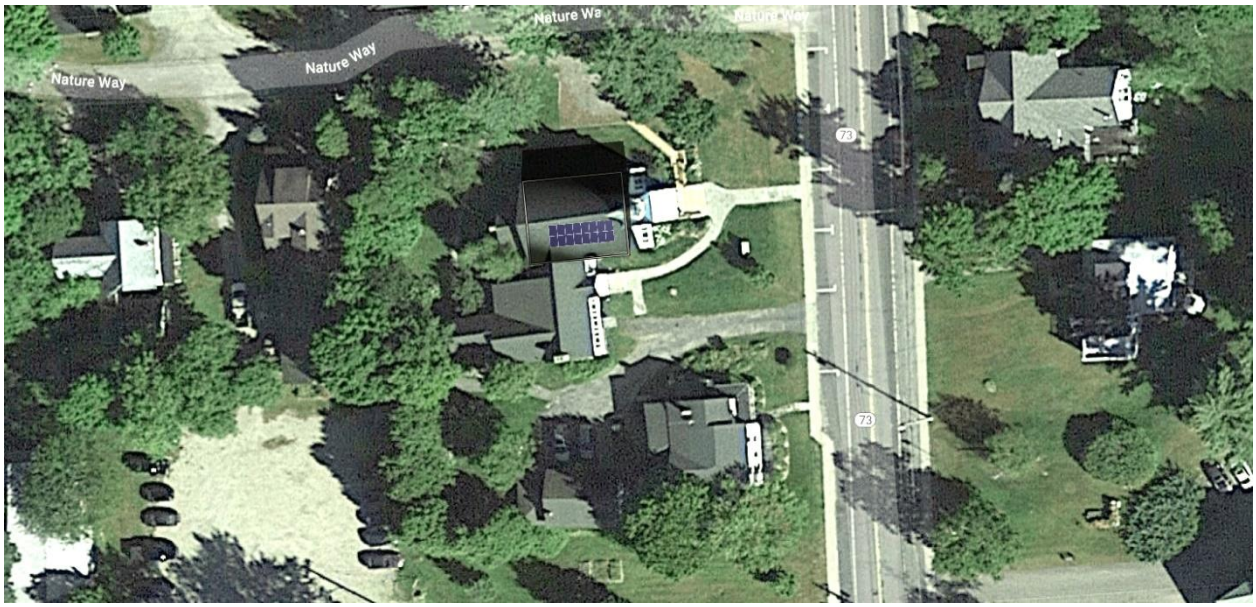
KVCC Church Council endorsed CJE recommendation to install Solar Panels on the Sanctuary Roof

- There will now be a Congregational vote, April 11, on to assess if the congregation supports installing Solar Panels on the sanctuary roof
- Two parishioners pledged 100% of the installation costs: no KVCC funding is required

Background

- Solar PV Proposals Developed by ADK Solar and APEX
- Council endorsed ADK Solar as preferred vendor
  - Headquartered in Saranac Lake
  - Came on site to develop proposal
  - Solar PV system installed cost: $13,516, pledged by two parishioners
- System Size: 16 Panels
  - Church electrical consumption is small. Approx. $700/year.
  - A typical home would require 24 to 32 panels
- Panel Capacity: 340 watts per panel
  - First year production is 108% of demand
  - Future years production will be approx. 98% of demand (10% decline is typical)
- Technology: panels now produce 75% more than 10 years ago, so fewer panels are required
- Warranty: 25 years on production, 10 years on panels, 12 years on inverter, 5 years on workmanship
- System Monitoring: ADK Solar monitors church performance
  - Will get an email after 2 days of nonperformance (below target).
  - Calls church office to arrange site visit/order replacement parts/repairs

Image of Solar on Sanctuary Roof (per ADK Solar)



Questions that have been asked to date

1. **Could you add more panels and sell the surplus electricity to NYSEG?** Yes, but the sale of the electricity would only get wholesale prices of 1 to 3 cents per kwhr. This is because you would be classified as an energy producer, hence only wholesale rates.
2. **Could you add more panels and develop a co-op to generate electricity to those who subscribe to the co-op?** Yes, requires fund raising for additional costs, management of NYSEG allocations and a site contact for NYSEG. A large job that needs a volunteer and subscribers to the coop
3. **Could you lease the roof space to a SOLAR PV vendor and let them sell the electricity while the church gets a lease payment?** No – the size of the roof is not of interest to the solar vendors
4. **Could you purchase solar pv from a vendor in place of installing on roof?** Yes, you would save about 10% on your electric bill, but you will lose the visual statement made by solar panels of the type of CJE church we are.
5. **The solar panels will ruin the visual lines of the church**. To some this may be true to others not so (Dan likes the look as do others)
6. **Why are the solar panels on that side of the roof?** It is south facing which is ideal for solar
7. **No other places in town have solar.** Not true. Over 50 homes have solar, as does the Noon Mark Dinner, Old Mountain Coffee, Martha Lee Owens office building.
8. **Solar does not work in our climate**. Not true. Dan's solar panels paid for themselves in 6 years….as have all the others. For the church, the panels are fully funded so they generate savings on day one, with no debt to offset.
9. **I do not believe in solar technology**. If you believe that, I cannot help. Others believe in it.
10. **The solar industry gets too many tax benefits**. This needs to be considered in comparison to other energy generating industries. For example, the oil industry gets a dry hole completion tax credit, investment tax credit, tax credits for R&D, up 15% oil depletion allowance, and more. The credits for solar are much smaller. If the point is to make them equivalent, that we can agree with, but, as of now, the solar industry lags in overall tax breaks vs the oil industry
11. **We should wait for better technology to come along.** If there was a way of predicting when the new products will be available to the market, then I could answer this question, otherwise, I cannot except to say that saving $600 per year now, plus the associated CO2 production is good... Solar arrays have improved by 70% in the last 10 years hence at you needed 40 panels before now only require 23.... Improvement and change are a constant. A few of the emerging options I am familiar with are
    a. perovskite and perovskite quantum dots are hybrid inorganic halide-based material that is layered on top of the cell to mprove overall performance. They can do it in the lab but have yet to scale up to manufacture. Oxford PV manufacturing saying they will produce in 2022, but everyone else is chasing this so it is hard to judge the validity of this date,
    b. adding etching to the solar cell .... improves performance but has yet to scale up and aside a research paper, no one else is talking about it,
    c. solar skins: another effort to add a coating to the solar panels to improve performance. It is currently being tested at the US National Renewable Energy Lab
12. **Silver prices are doubling in 2021, will this make panels too costly?** Current panels use two thirds of an oz of silver which at current prices is $18.50, doubling increases the costs to $37.00. Typical 340-watt panels cost $375, so this increase is less than 5% of the total cost and will not make the panels unaffordable