

CREATION CARE AND ENERGY AT UCCH

**Earth Ministry Energy Team Report
To the Board of Trustees
August 20, 2013**

The Church as Social Pioneer

H. Richard Neibuhr wrote:

The church is the sensitive and responsive part in every society and mankind as a whole. It is the group which hears the word of God, which sees God's judgments, which has the vision of the resurrection. In its relations with God it is the pioneer part of society that responds to God on behalf of the whole society.

CO2 Is Growing at an Accelerating Rate

- Scientists say CO2 concentrations must stay below 450 PPM if temperature increase is to stay below 2 degrees centigrade.
- As of July 2013 NOAA reported concentrations of 397.23 increasing at 2.5 ppm each year. In 20 years we will reach 450.
- The IPCC has called for developed countries to reduce emissions by 40% by 2020 and 90% by 2050.
- UEM recommends cutting our carbon footprint by 40-50% by 2020.

This is how we care for creation--by taking representational responsibility and becoming a sign of hope.

Our Energy Usage

Electricity (Average Cost/Usage):

604 Kwh/Day / 220,720 Kwh/Year

\$51.58/Day / \$18,827/Year

605 Kwh/Day / 220,720 Kwh/Year (equiv to 19 households)

25.2 Kw continuous use (252 x 100-watt lights)

Natural Gas (Average Cost/Usage):

25 Therms/Day / 9112 Therms/Year

\$23.31/Day / \$8510/Year

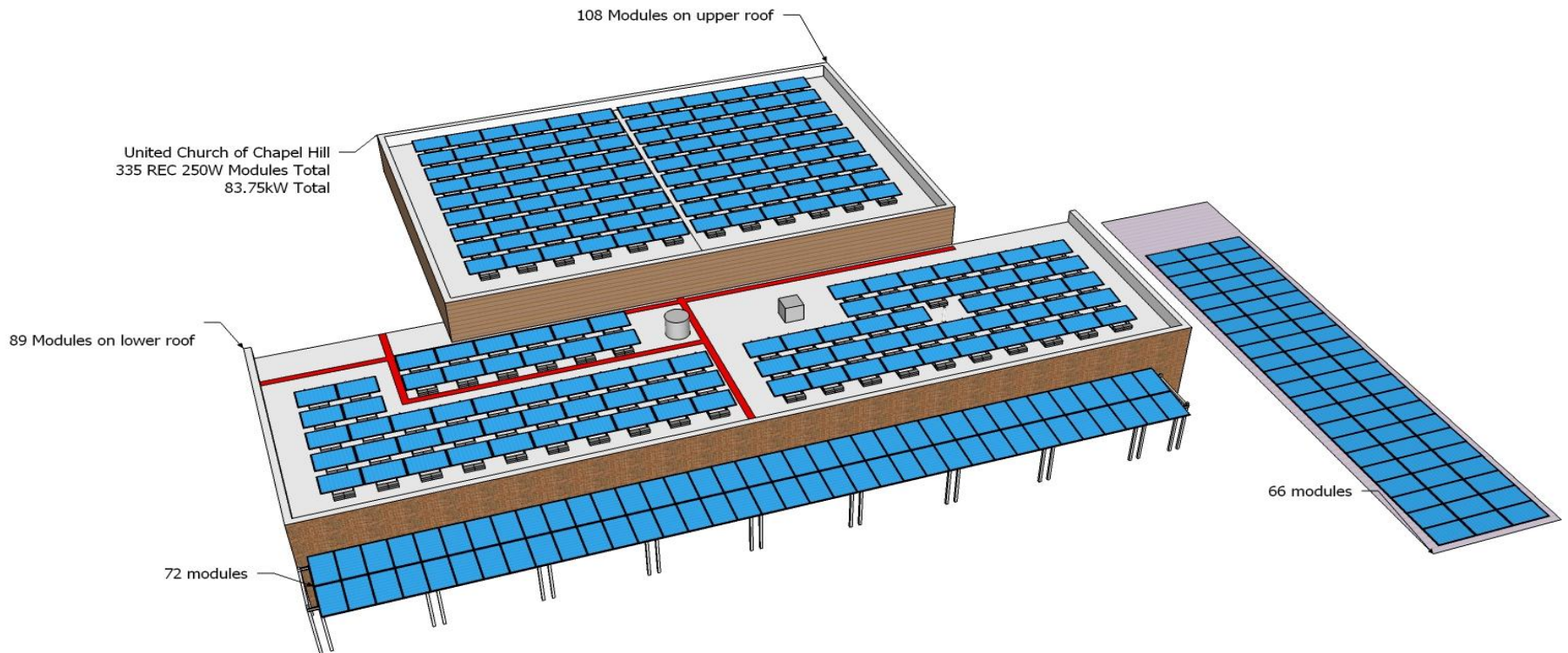
24.96 Therms/Day / 9112 Therms/Yr (equiv to 14 households)

Our Carbon Footprint

- 238,378 pounds CO₂/Yr from Electricity
- 109,891 pounds CO₂/Yr from Natural Gas
- **Total: 348,269 pounds CO₂/Yr (174 Tons/Yr)**

EPA Portfolio manager: our score is 43 on 1:100 scale (75 = Energy Star Certified)

Go Solar



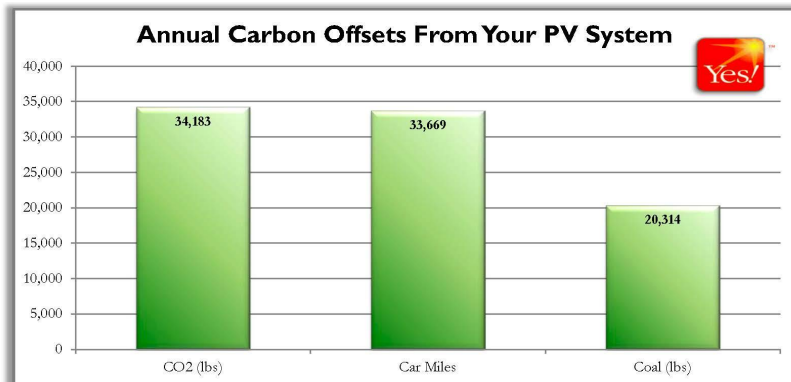
Two Proposals from Investor Side

	18Kw Trellis only	83.75 Kw Full Array
Initial Investment	\$ 66,240	\$ 258,788
Federal Tax Credit 30%	\$ (19,872)	\$ (77,636)
State Tax Credit 35%	\$ (23,184)	\$ (90,576)
Federal Depreciation	\$ (16,891)	\$ (65,991)
State Depreciation	\$ (1,565)	\$ (6,114)
Federal Tax on state credits	\$ <u>7,425</u>	\$ <u>29,007</u>
Net Cost	\$ 12,153	\$ 47,478
First Year Solar Production Offset	\$ 2,257	\$ 9,852

- Investors set up LLC and lease the panels to the church
- Investors qualify as active participants in the business of the LLC
- Church as lessee then net meters with Duke Power (rate is \$08.6 per Kwh at present) and realizes savings
- Church pays an amount roughly equivalent to the savings to the LLC for the first six years
- Cost is neutral for church for first six years but church is buying clean energy
- At end of six years, church buys system for fmv (10-25% of original cost) producing further return to investors

Carbon Offsets from PV Systems

Trellis Only (18Kw)



kWh/year	CO2 (lbs)	SO2 (lbs)	NOx (lbs)	Car Miles	Trees	Coal (lbs)
25,079	34,183	136	53	33,669	398	20,314

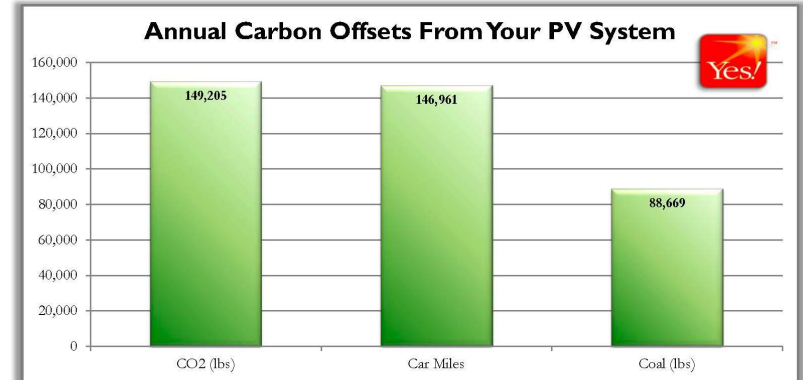
Produces 25,079 Kwh*

11.4% of total electricity

Would reduce CO2 by 27,151 lbs

7.8% of total carbon footprint

Fully Array (83.5 Kw)



kWh/year	CO2 (lbs)	SO2 (lbs)	NOx (lbs)	Car Miles	Trees	Coal (lbs)
109,468	149,205	595	230	146,961	1,735	88,669

Produces 109,468 Kwh

49.6% of total electricity

Would reduce CO2 by 149,205 lbs

31.3% of total carbon footprint

***Could increase production on trellis by 25% with SunPower modules. Cost would also increase 25%**

Two Proposals from Church Side

Trellis Only

1st 6 yrs church neutral

Cost yr 7 @ 25% = \$16,560

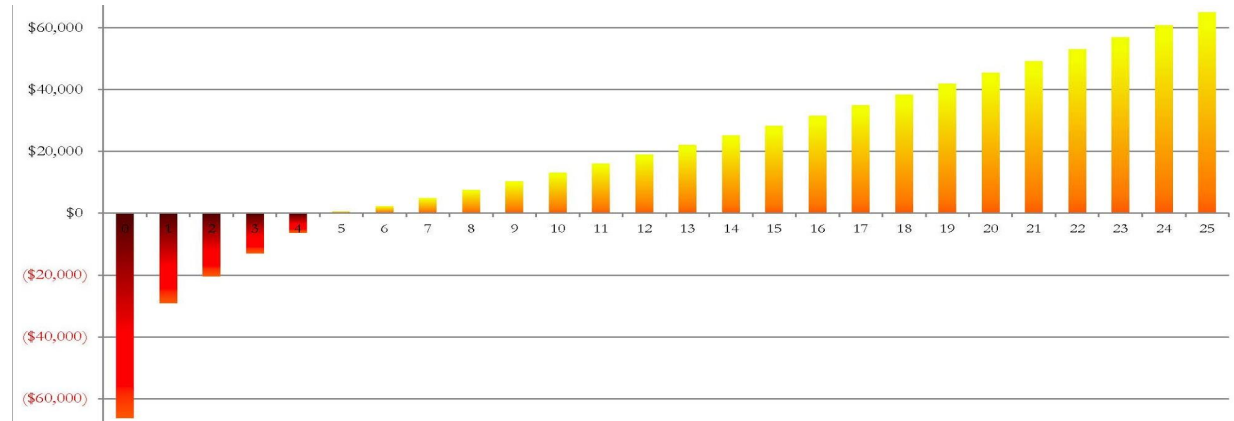
Savings yrs 7-25 =

\$62,680

Positive cum cash flow =

\$46,120

Cost recovery pd = 6 yrs



Full Array

1st 6 yrs church neutral

Cost yr 7 @ 25% = \$59,697

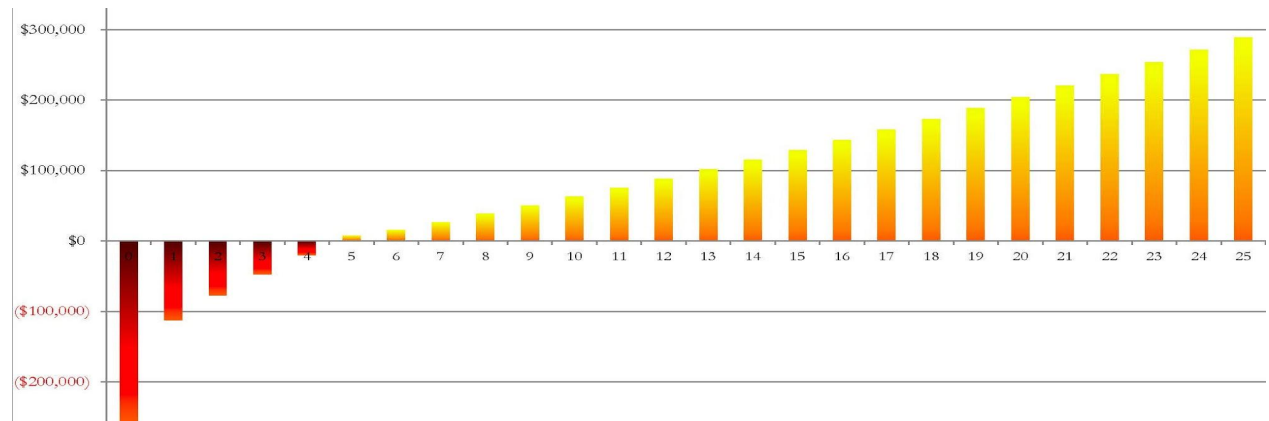
Savings yrs 7-25 =

\$273,954

Positive cum cash flow =

\$214,257

Cost recovery pd = 5 yrs



Conclusion

“Seek ye first the Kingdom of God
... and all these things will be added unto
you.

- We will have acted on our convictions
- Reduced our carbon footprint
- Become a sign of the resurrection, and
- Become an energy Star!

And

(hate to mention it) thanks to Uncle Sam,
everyone will have earned/saved money.