



Dennis Union Church Photovoltaic Project A Year Later

May 21, 2009

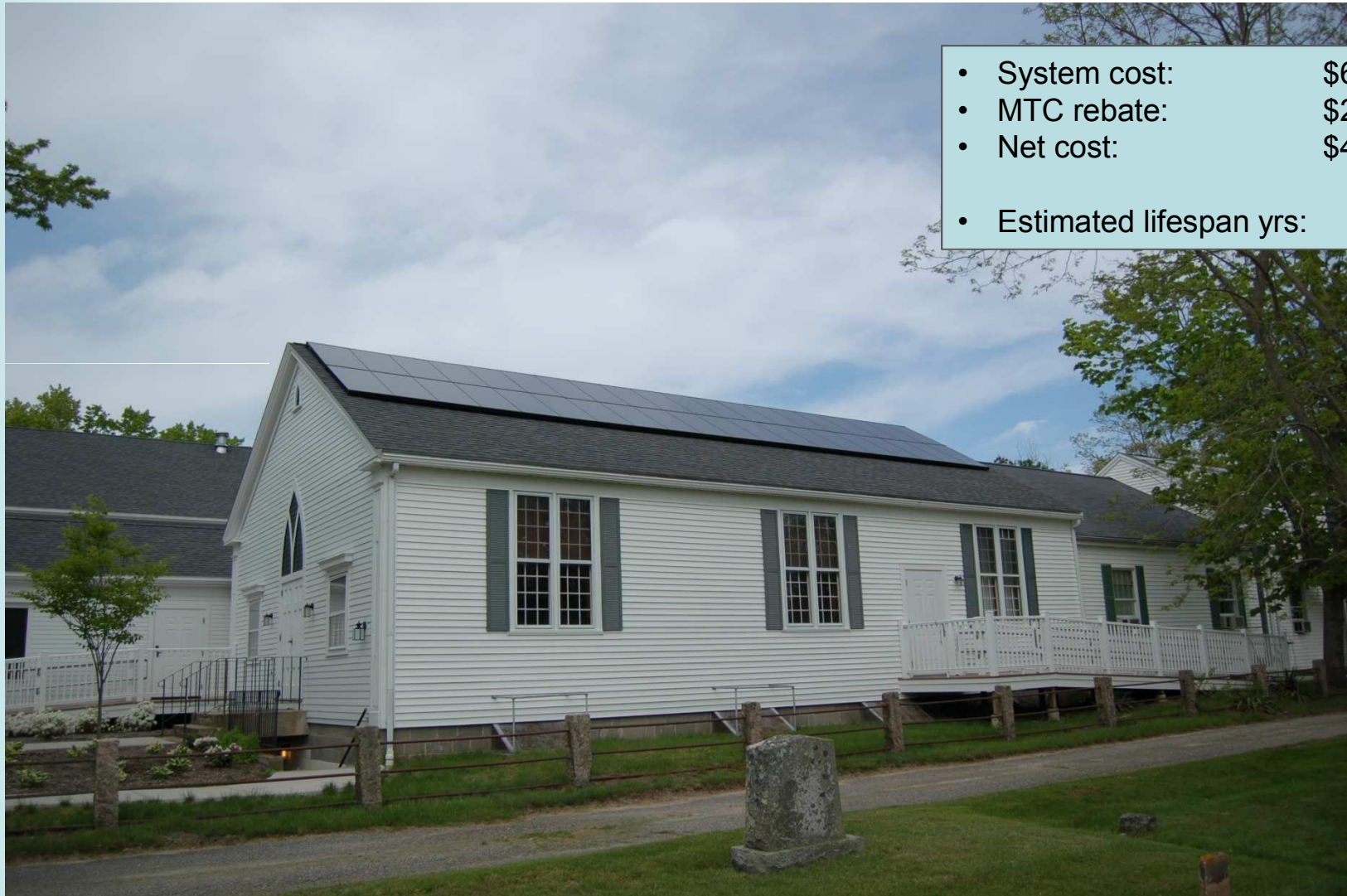
Online since April 7, 2008, Dennis Union Church's photovoltaic system has had some notable accomplishments.

In the last year or so...

- 19.4% of DUC's electricity generated via its photovoltaic (PV) system
- 6.53 tons of CO₂ emissions averted
- Completed the first photovoltaic (PV) installation in Dennis, and one of the first in OKH historic district
- Received [national recognition](#) from EPA as recipient of one of three "2008 Energy Star Congregation" awards nationwide
- Recognition by the Commonwealth of Massachusetts as an [energy leader](#) (alongside Fenway Park, Gillette Stadium, Cisco, and others)



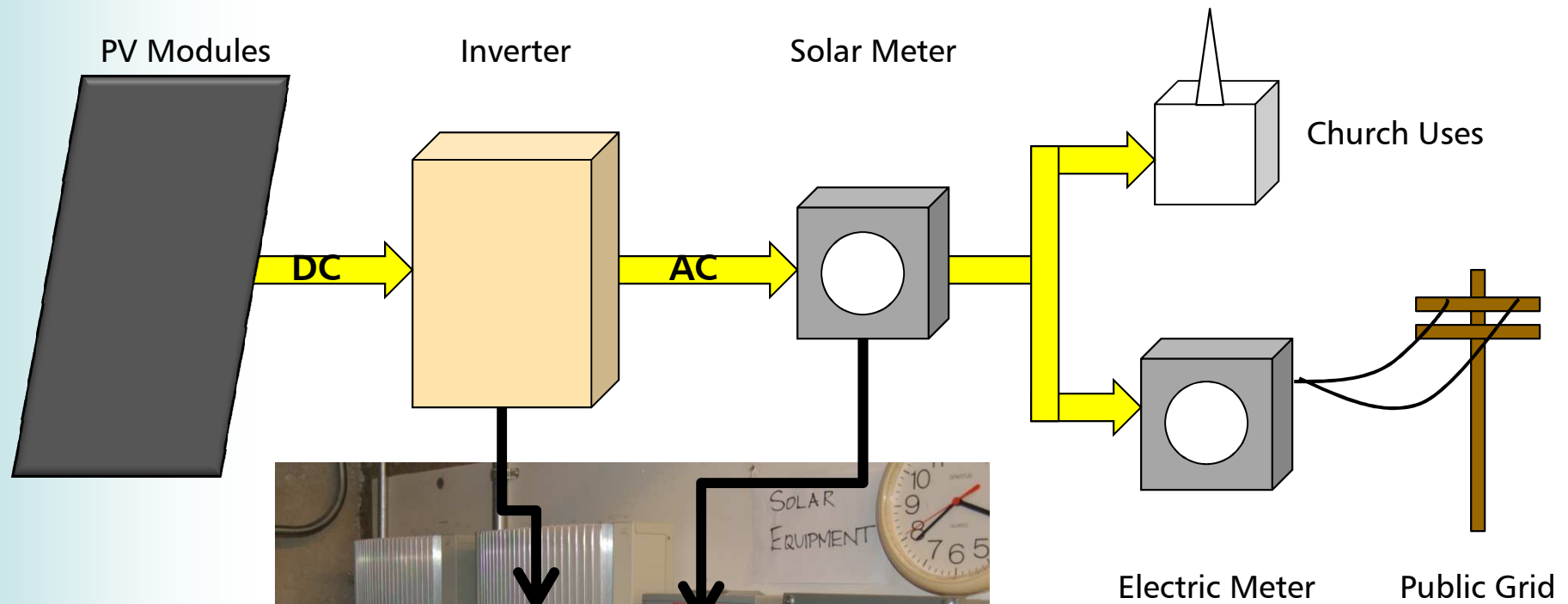
Outside, the system consists of 40 black modules mounted on the roof of fellowship hall.



- System cost: \$68,177
- MTC rebate: \$26,650
- Net cost: \$41,527

- Estimated lifespan yrs: 25

The system feeds electricity to the church and back to the electric grid.



Electric Meter
turns backward
when production
exceeds usage

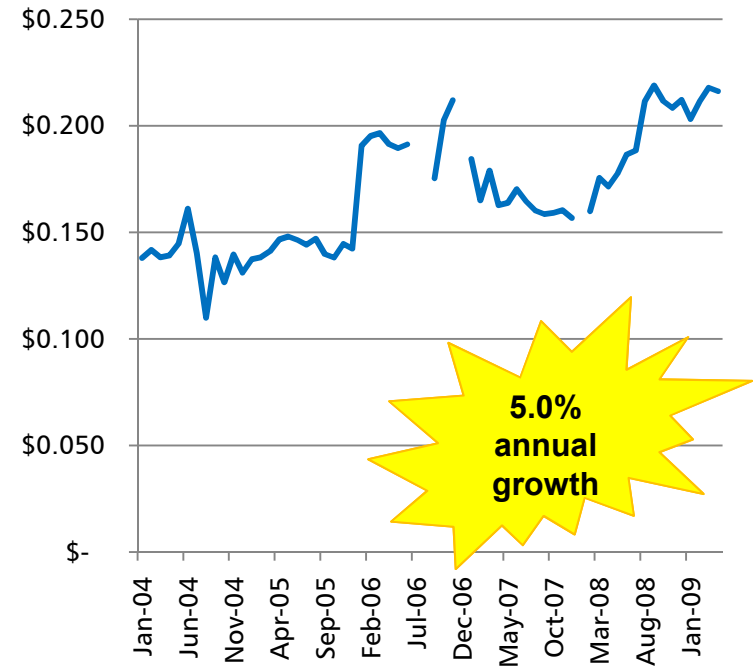
To understand the economics of PV, one first must understand electricity prices.

\$/kWh Paid by DUC



Adjusted for 1.5¢ uplift 2006-2009

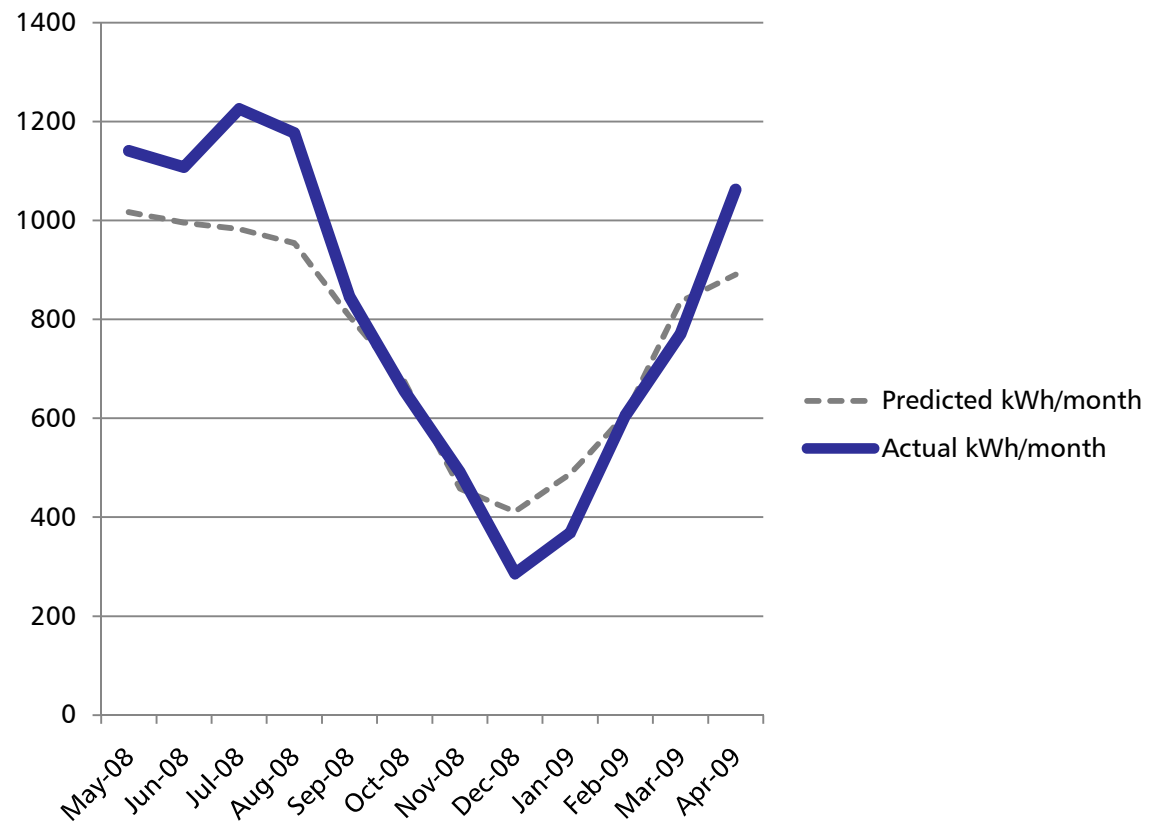
\$/kWh Paid by DUC: Adjusted for Uplift



In its first year, the system performed better than predicted.

- 9,738 kWh produced
- Production 6.8% greater than forecast*
- \$2,122 saved

DUC PV First Year Performance



Overall, the return on DUC's investment looks very competitive.

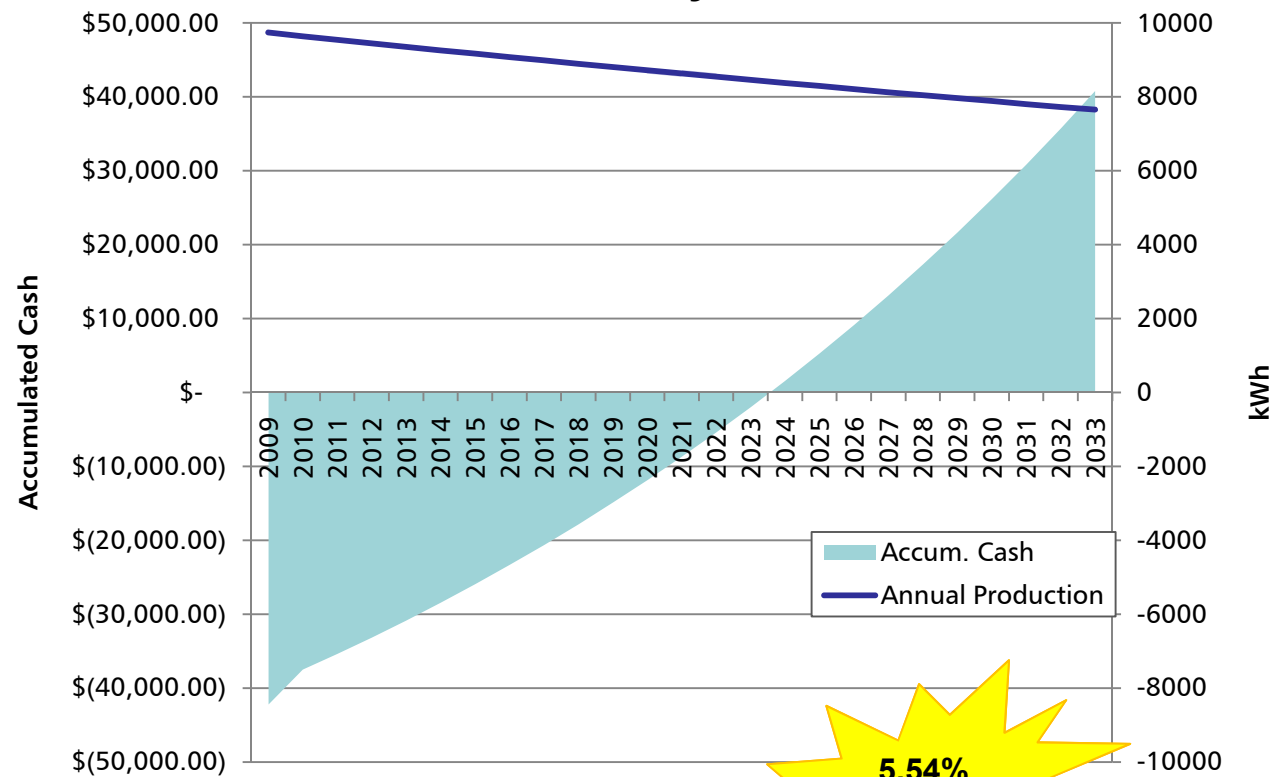
Key assumptions:

- 25 year lifespan
- Electricity costs will continue to escalate at 5.0% per year
- System output will decline at 1% per year
- Insurance costs at \$150/year, increasing at 3% per year

Unpredictable factors are not included in this calculation, but likely offset one another:

- Maintenance or replacement of inverters
- Power production after 25 years

Forecast 25-Year System Performance



5.54% IRR

20 year T-bill rate: 4.10%



What did we learn?

- Initial projections conservative
- The Renewable Energy Credits market is illiquid, and does not benefit projects of our size
- The system requires no intervention and is easy to forget
- We need to remember it; it's a real distinction for DUC
- PV looks a pretty good investment

Questions?

