House of Worship (HOW) Solar Panels - Stewarding Decentralized Power Generation

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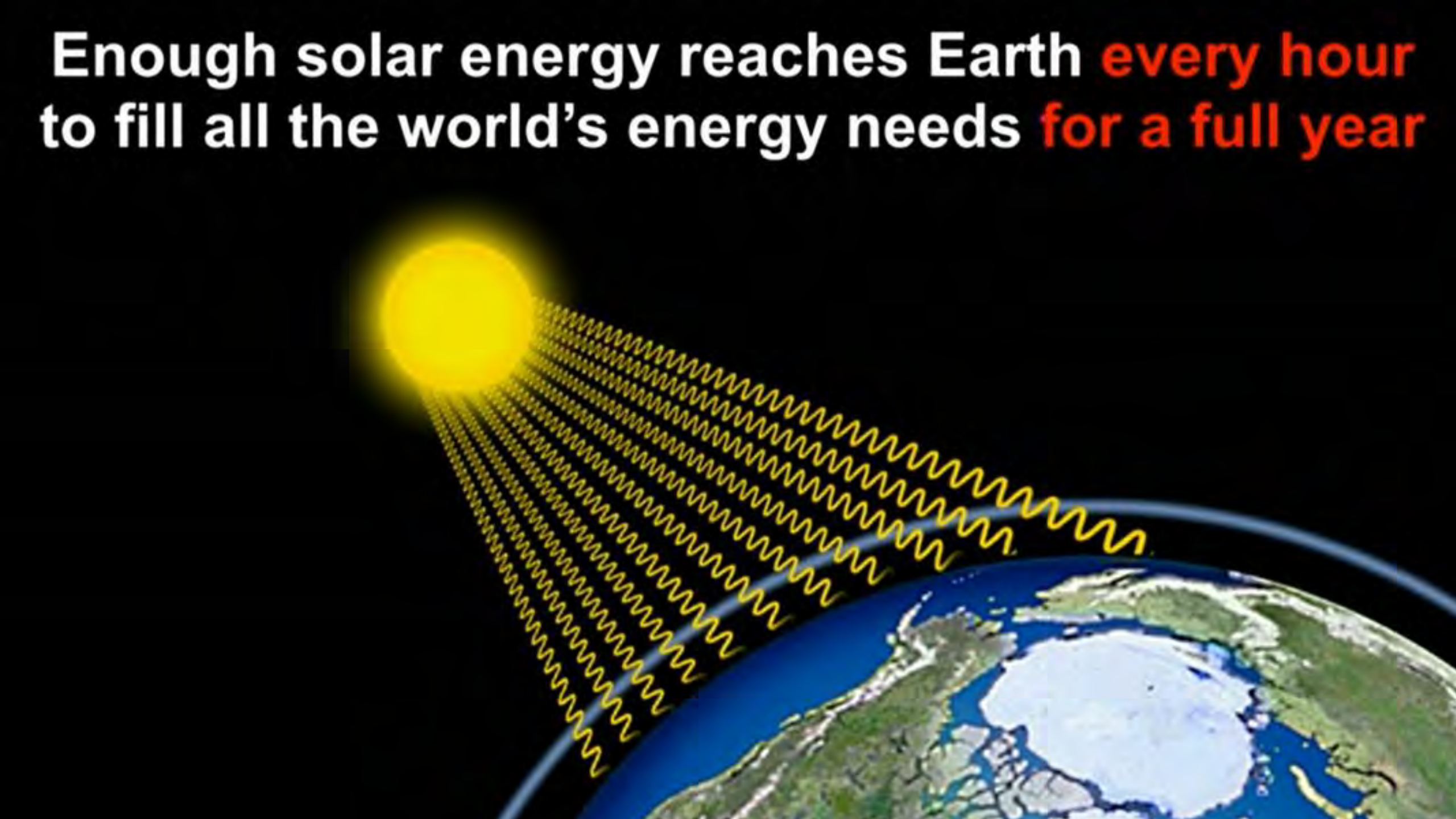
BARGAIN!!!

BARGAIN SOLAR

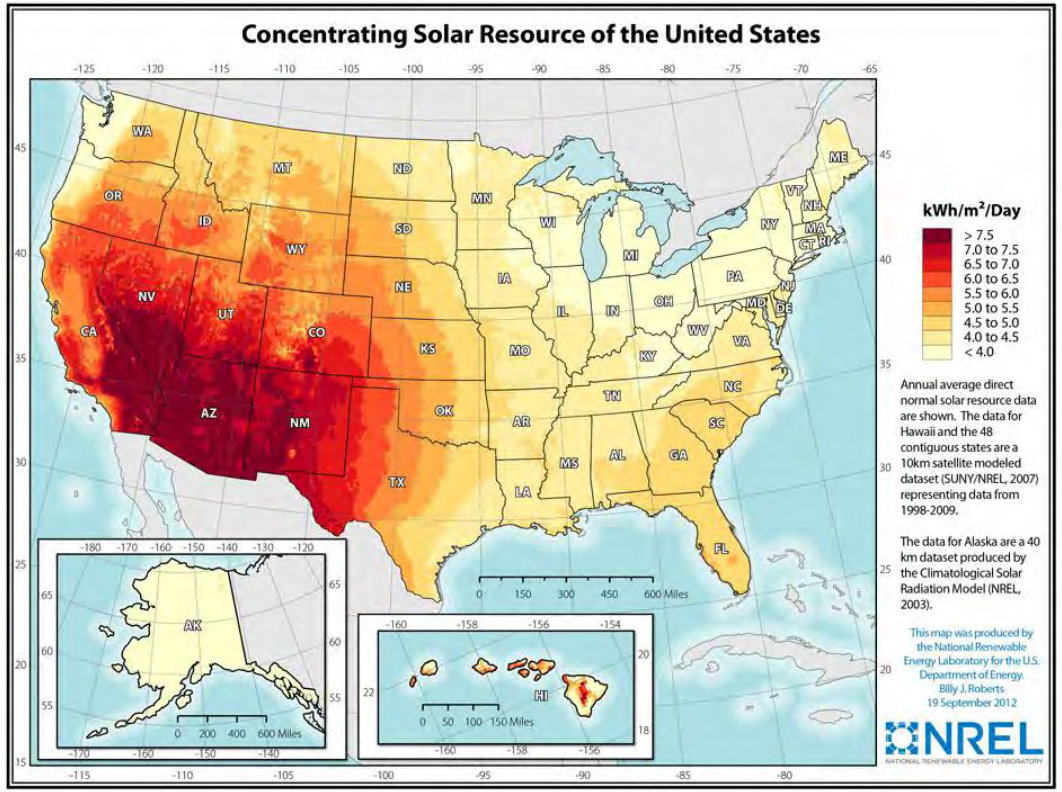
Let's Go Solar Mate

Enough solar energy reaches Earth every hour
to fill all the world's energy needs for a full year

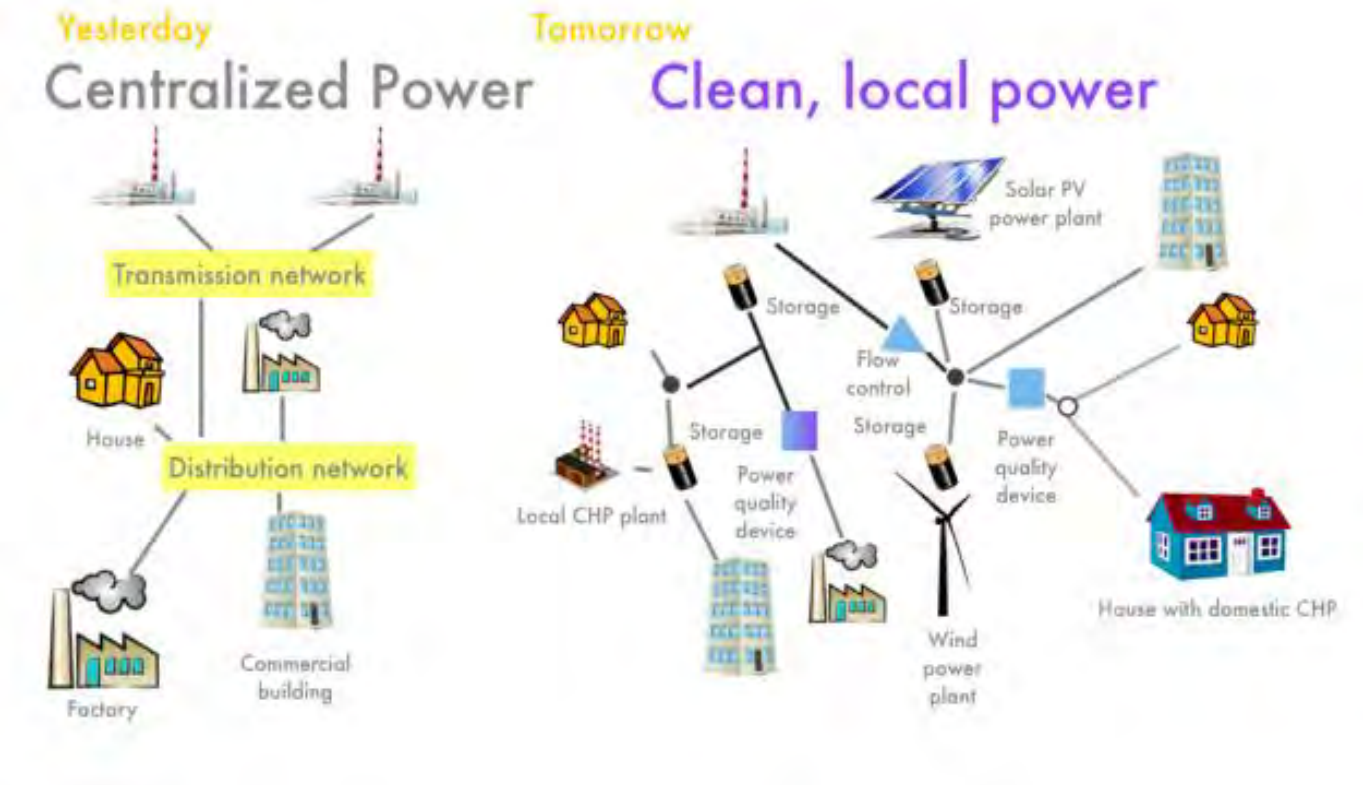


Sunshine by State

State	Place	% Sun	Total Hours	Clear Days
Florida	Tampa	66	2927	101
Michigan	Lansing	51	2392	71



Why solar is a big step towards doing our part, as faith-based leaders, to promote environmental stewardship?

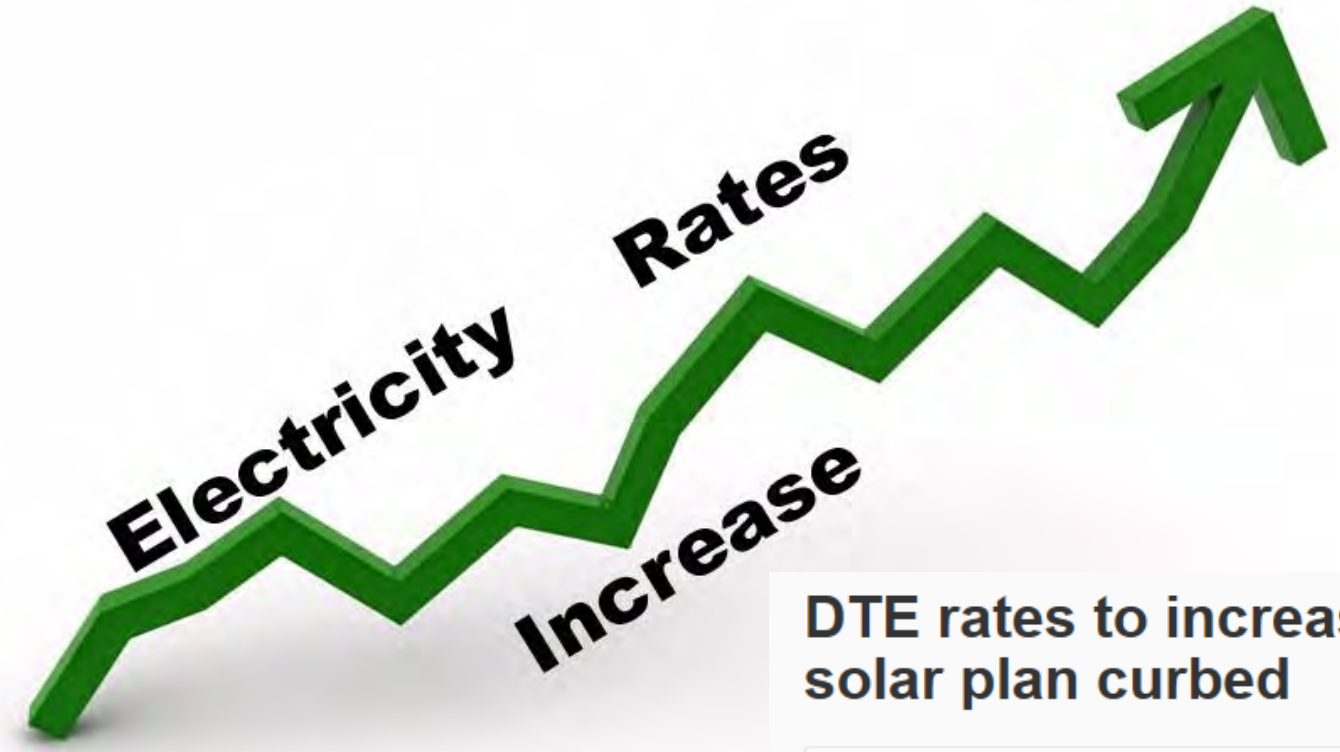


The Investor Model

Solar Installation at No Cost to Your House of Worship!

Renewable Share of Total Electricity Generated - 2018

Energy source	US	MI
Wind	6.5%	4.7%
Biomass (total)	1.4%	0.8%
Solar (total)	1.5%	0.1%



News Story

Michigan Electricity Rates Since 2003: 15 Increases, 1 Cut

Consumers Energy gets another rate hike

By Evan Carter | April 3, 2018

DTE rates to increase nearly 9% for some users; firm's solar plan curbed

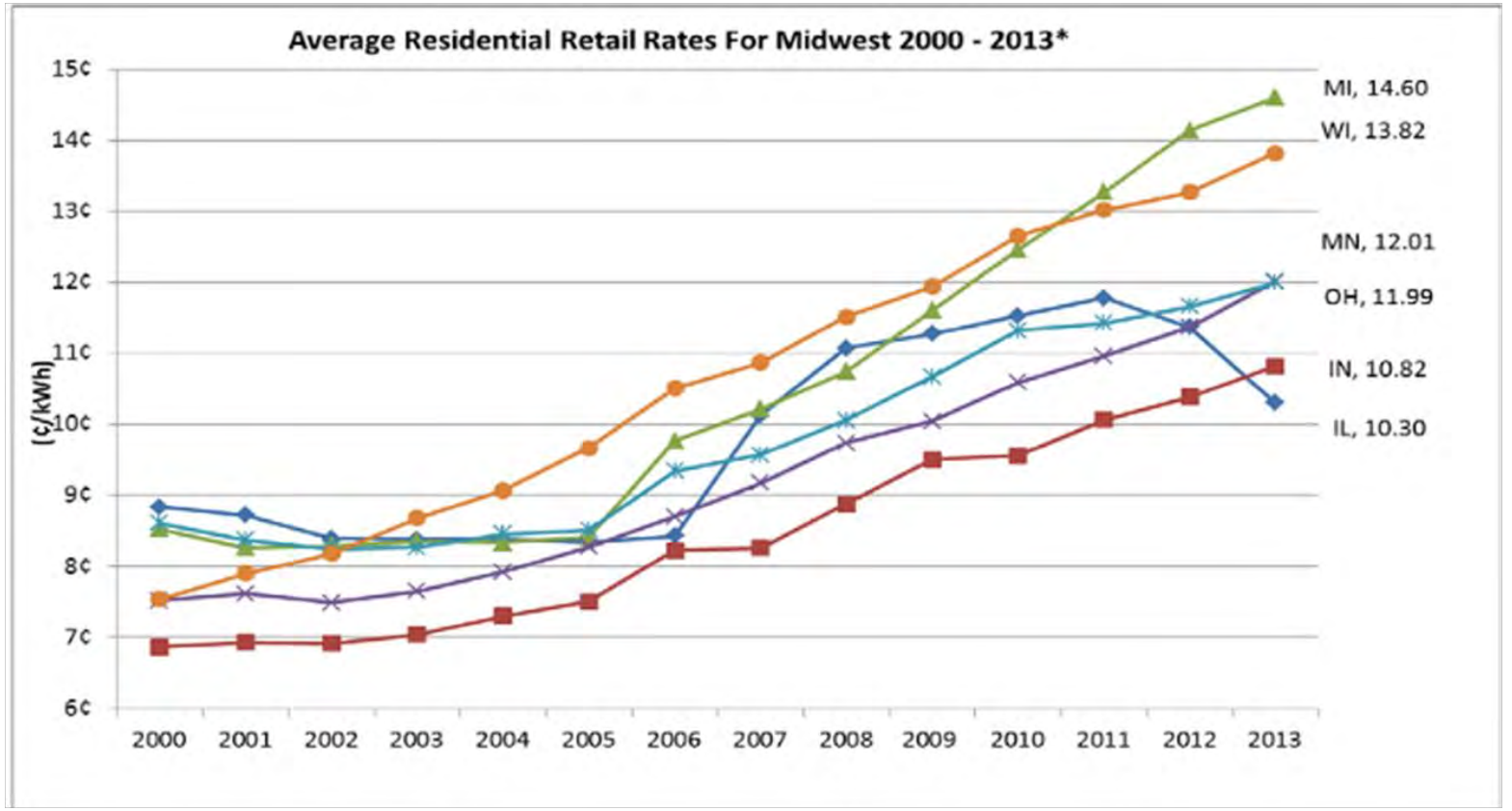
Beth LeBlanc, The Detroit News Published 4:36 p.m. ET May 2, 2019 | Updated 11:17 p.m. ET May 2, 2019

Michigan Public Service Commission – Approves Rate Increases….

Why? Michigan has Invested Heavily in Electrical Generation Infrastructure

Does the coal-burning utility control the government? Or do we?

Michigan Electricity Rates – A Bargain?



Cost is 24% more than you pay now!

Cost is 36% more than solar on your own roof!

DTE | Billing & Payment | Service & Price | Outage & Safety | Save Energy | DTE Impact & News | About Us

Overview | Courtesy Knock | FAQ | Our Projects | Enroll Now

MIGreenPower™

MIGreenPower is a simple and affordable program that empowers you to attribute a greater percentage of your energy use to DTE Energy's newest wind and solar projects. Whether you are a business owner, homeowner or a renter, joining MIGreenPower can help you go green without installing special equipment or making exterior home or building alterations. Beyond lowering your carbon footprint, participating helps to protect the environment for future generations.

Enroll Now Join MIGreenPower

Program Benefits

Local

Joining the MIGreenPower program enables you to support renewable energy production in Michigan. The growth of renewable resources in our state creates local jobs in the clean energy industry and reduces your overall carbon footprint.

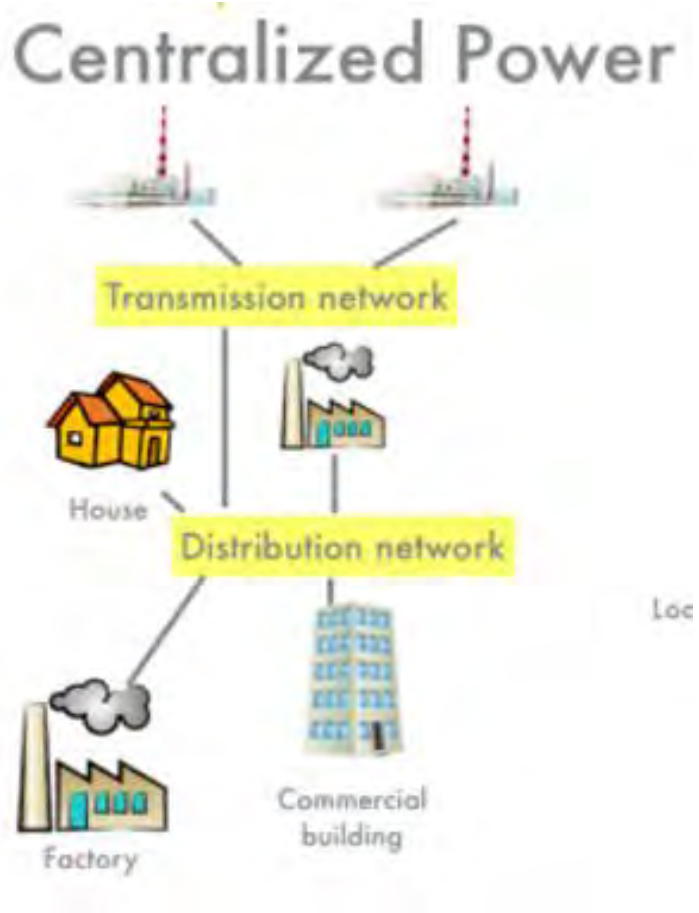
Flexible

Program participation is structured in five percent increments, giving you the power to choose the level of impact that works best for you. You can attribute anywhere from 17.5 to 100 percent of your energy use to renewable energy.

Affordable

Both residential and commercial customers can use our environmental impact calculator below to find a participation level and financial contribution that works best for you.

We are standing at a crossroads in the history of electric utilities.



Centralized Electrical Power Grid

Problems with Today's Centralized System

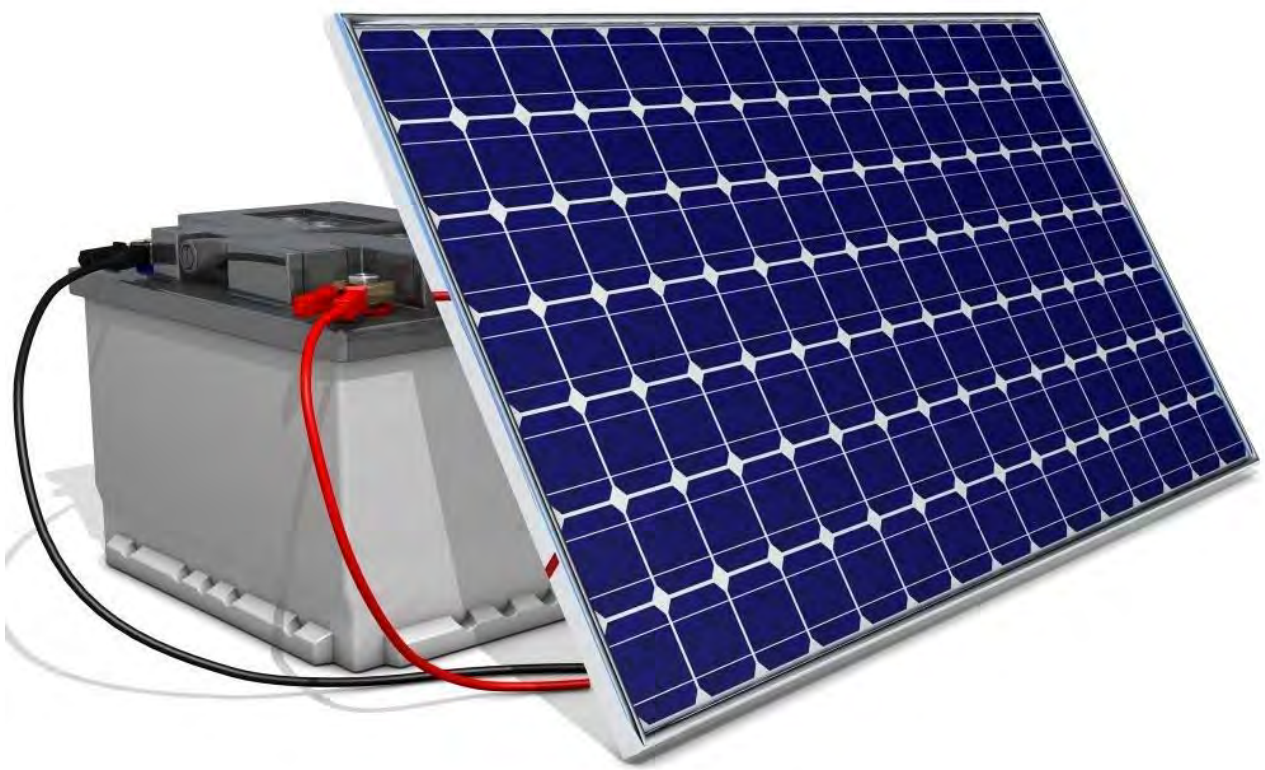
Old Equipment needs repair; unreliable and costs more

Problems with Today's Centralized System

Efficiency: Much of the total energy content of fossil fuels burned at centralized plants is wasted in the process of generating power and delivering it over long distances to customers.

Problems with Today's Centralized System

Environmental Concerns: Though the environmental impact varies by energy source, centralized energy generation contributes to several concerns, like air pollution, water use and discharge, land use, and waste generation.



Reliability: If there's anything you can count on, it's the sun. As the electrical grid equipment continues to age and become more vulnerable, sun, wind, and water are here to stay. Battery storage solves the problem of intermittency, allowing renewable energy sources to be used day in and day out.

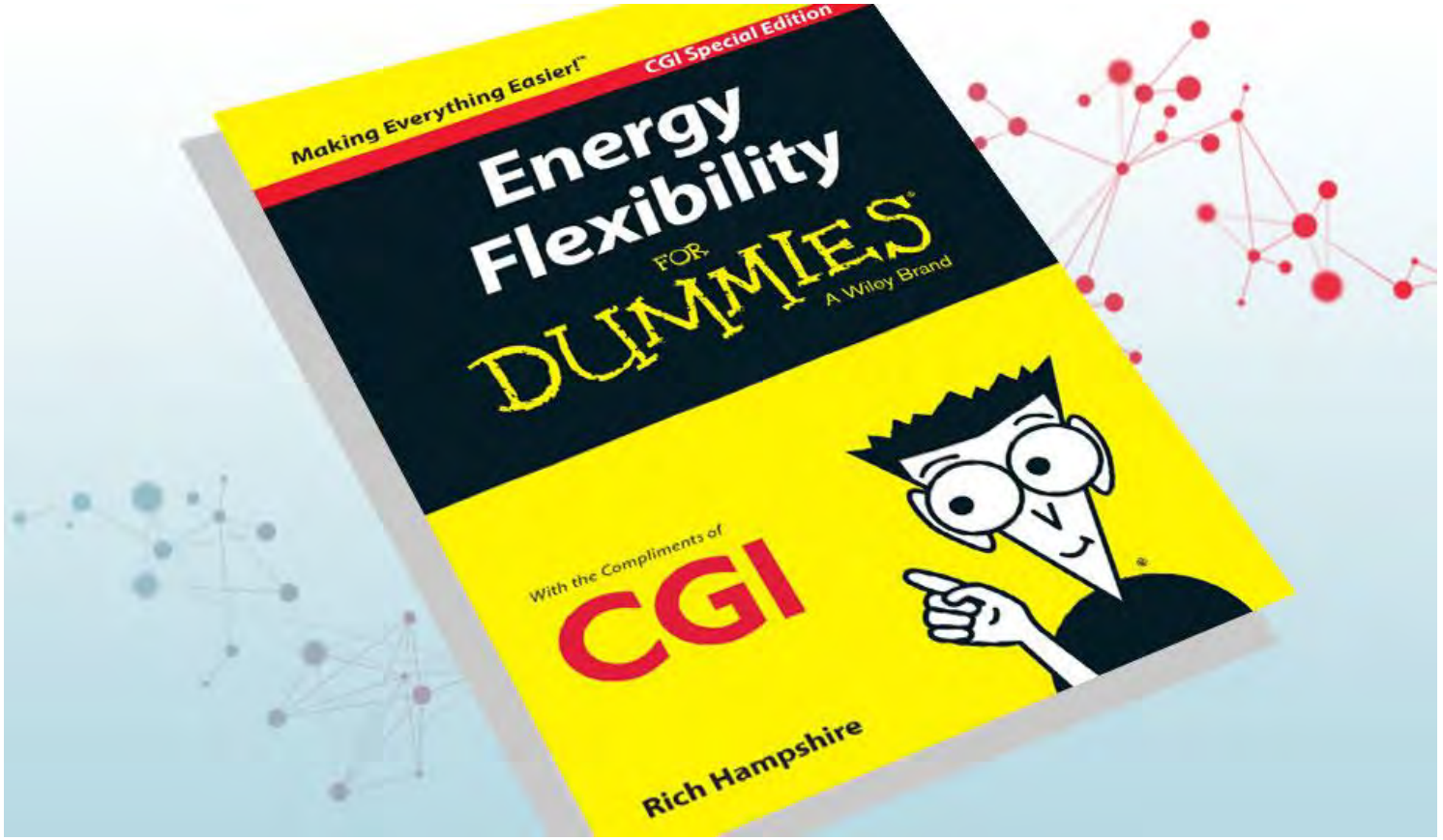
Advantages of Future Decentralized Systems

Advantages of Future Decentralized Systems

Efficiency: When electricity is generated closer to those who use it, all the electricity potentially lost in transportation (typically 5%) is now usable.

Advantages of Future Decentralized Systems

Modularity: The decentralization of the distributed energy network means that if one part of the system breaks down, it doesn't disrupt the entire system.



Advantages of Future Decentralized Systems

Flexibility: The maintenance and replacement of components of the decentralized system is much easier. New energy generation and storage systems can be built and integrated without disrupting the system.

Advantages of Future Decentralized Systems

Environmental Responsibility: a grid based on renewable energy sources, has a much more positive environmental impact, specifically when it comes to land use and air pollution.

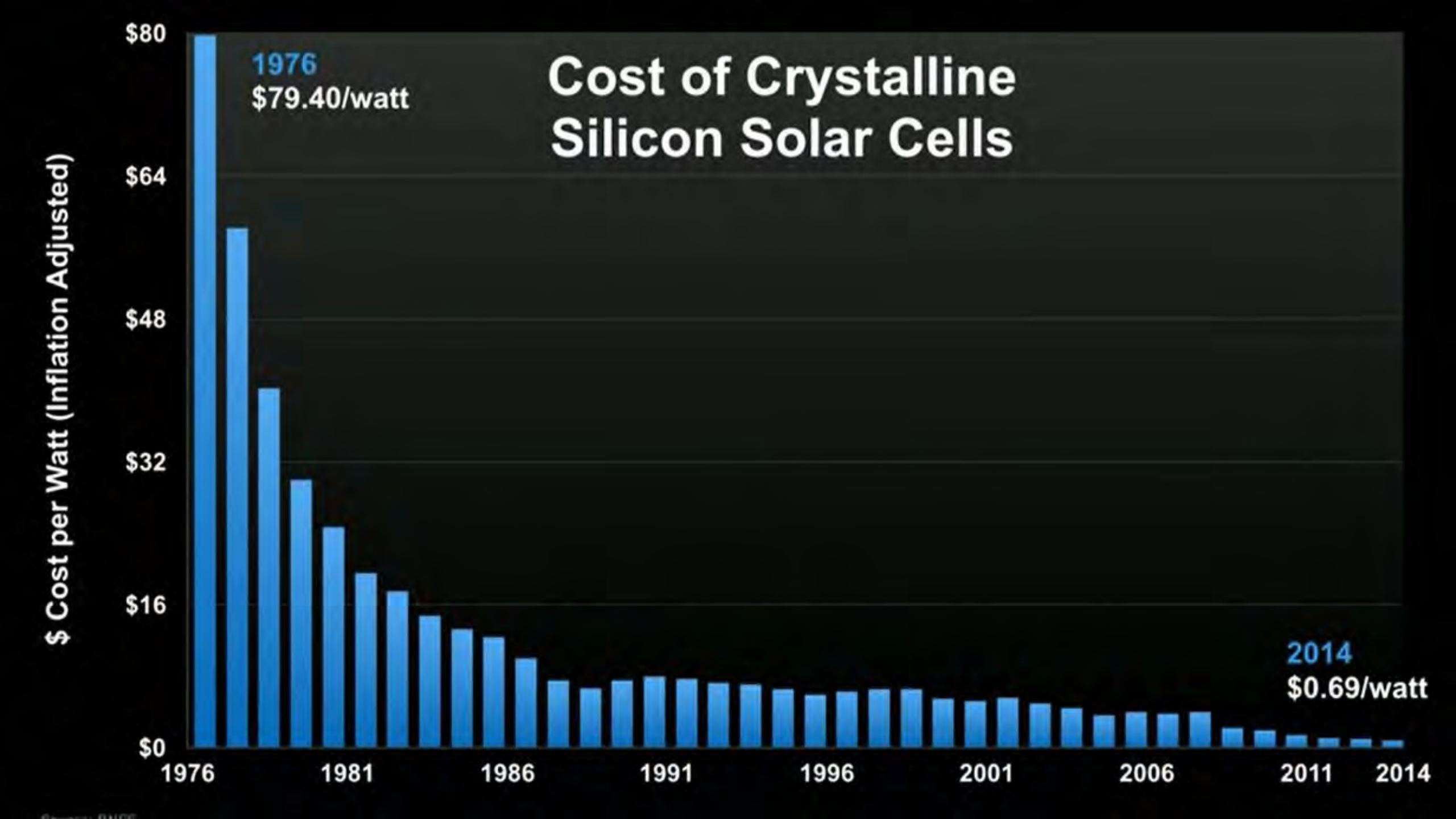
Advantages of Future Decentralized Systems

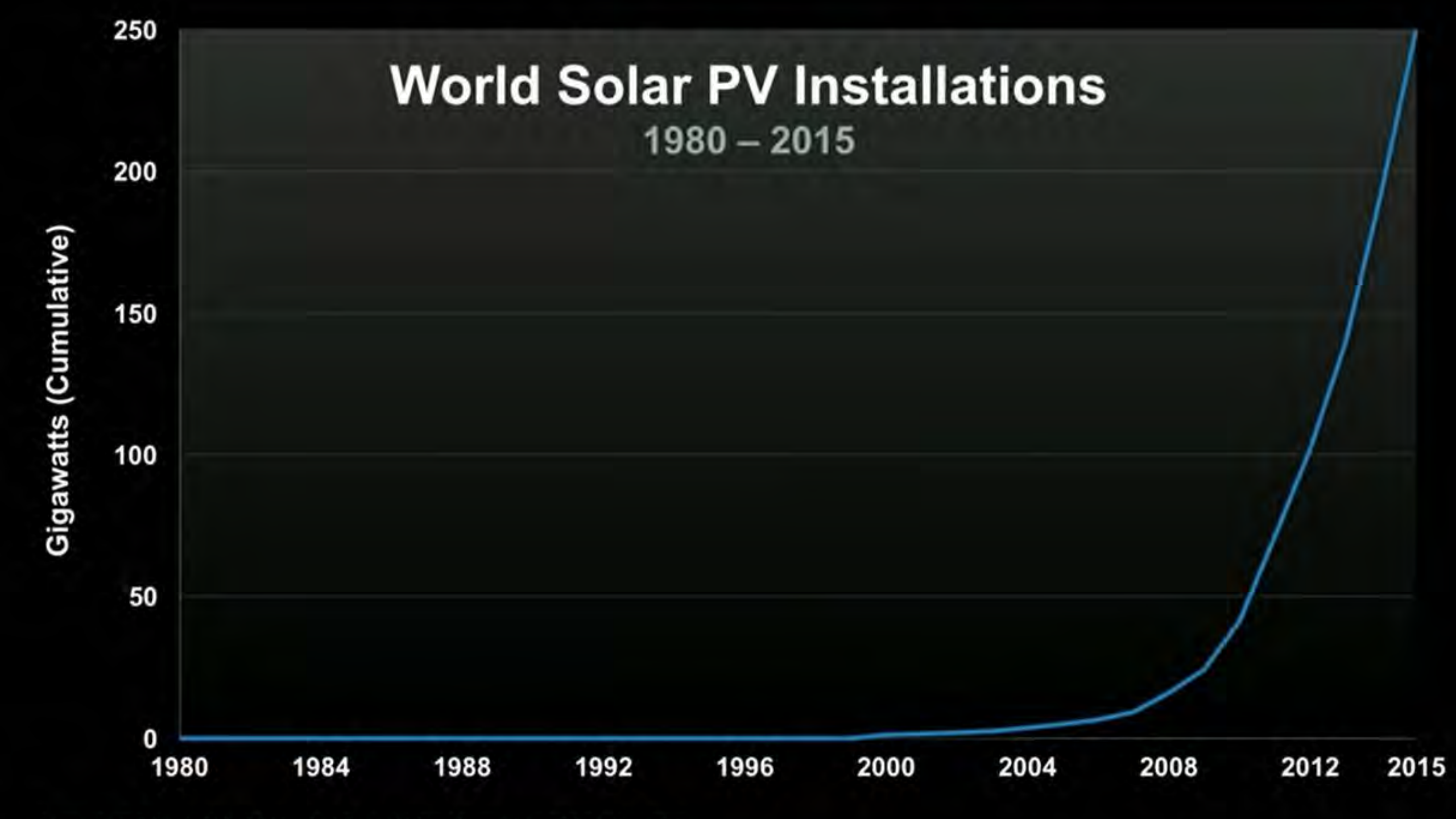
Economy: As renewable energy generation and storage becomes more and more popular; the production and maintenance costs of these technologies continues to fall. Solar power generation is set to rival the cost of non-renewable power sources.

Grid Parity

Average Levelized Cost (Estimated for 2020)	$/MWh
Nuclear	$ 95.20
Natural Gas	$ 72.60
Coal	$ 95.10
Hydro	$ 83.50
Wind (Off-Shore)	$ 196.60
Wind (On-Shore)	$ 73.60
Solar PV (Power Company)	$ 125.30
Solar (on own roof-20 yr)	$ 115.00

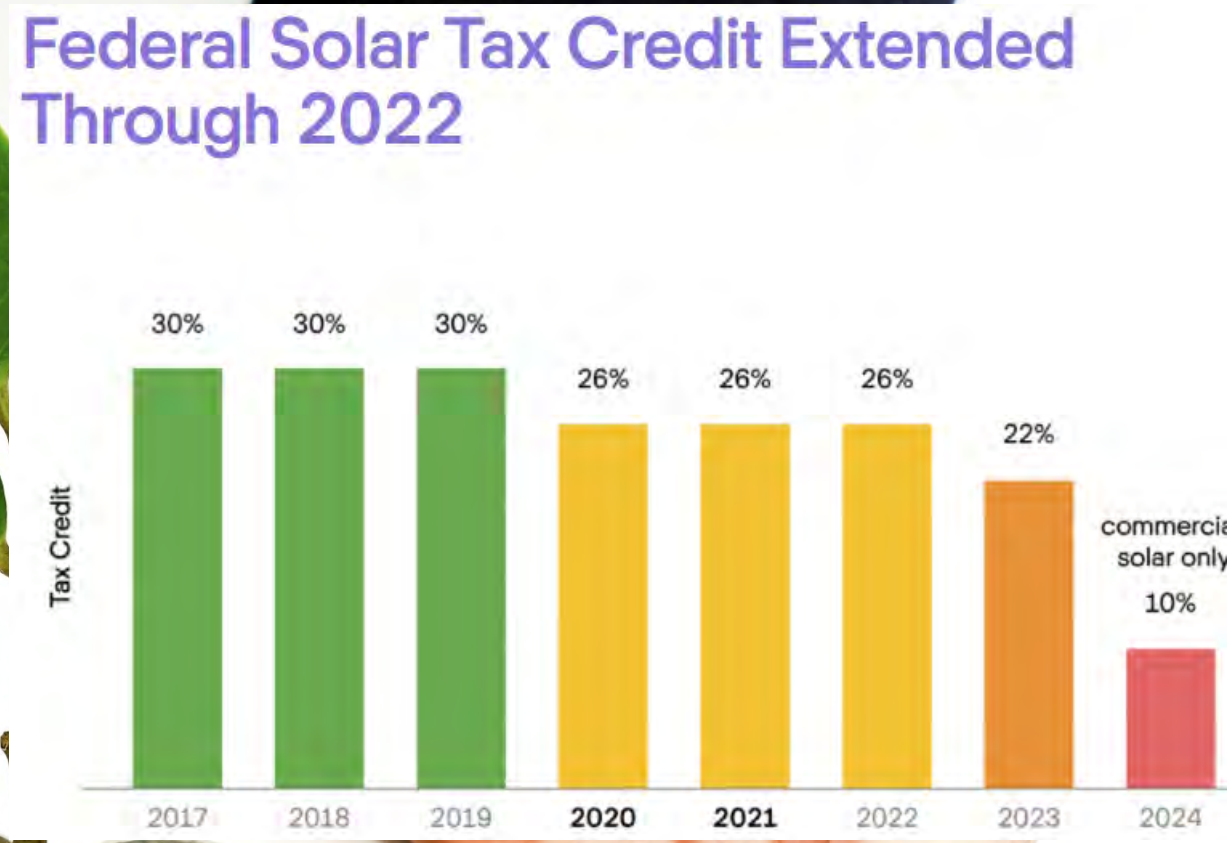
https://infogalactic.com/info/Cost_of_electricity_by_source


Cost of Crystalline Silicon Solar Cells
1976
$79.40/watt
2014
$0.69/watt
$ Cost per Watt (Inflation Adjusted)
$80
$64
$48
$32
$16
$0
1976
1981
1986
1991
1996
2001
2006
2011
2014

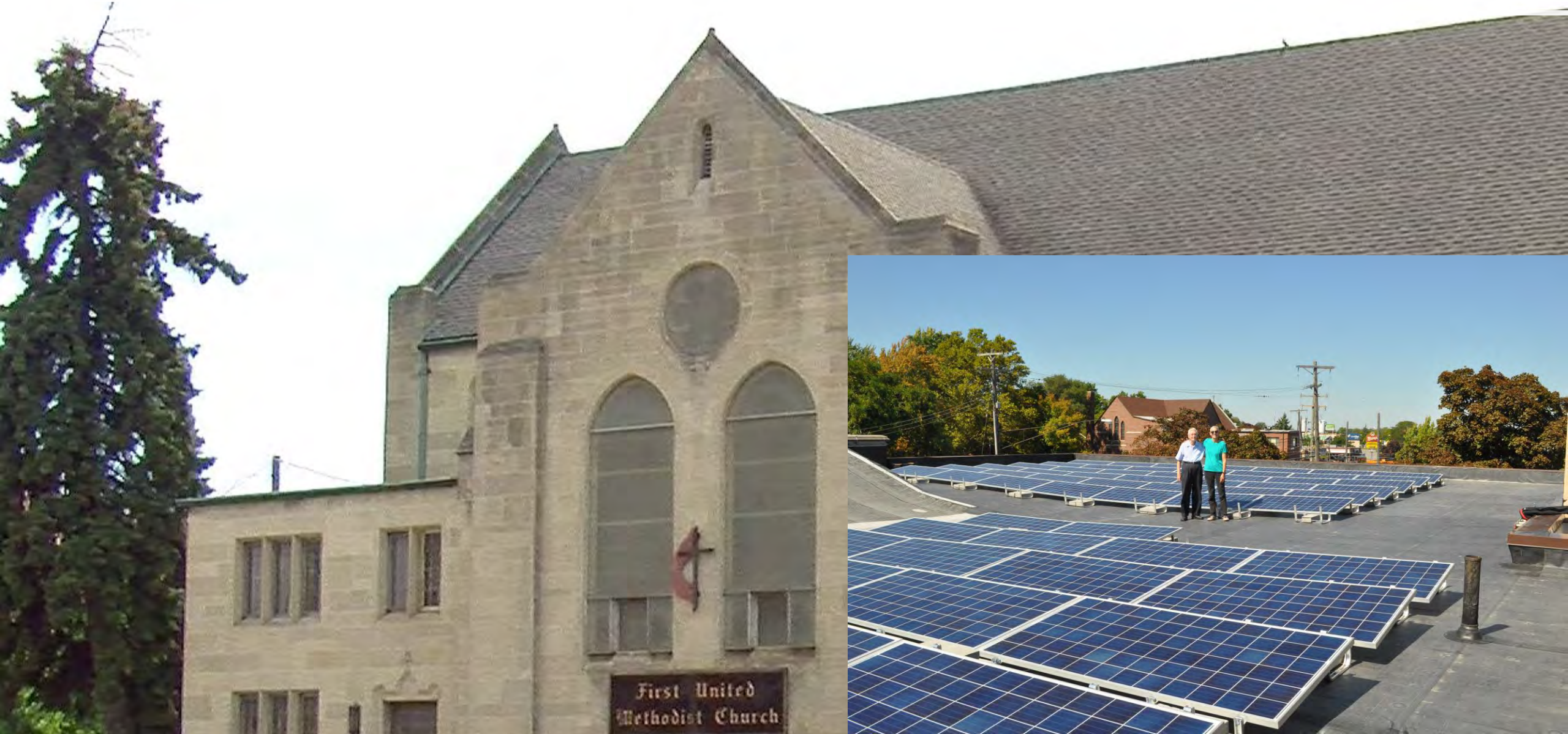

World Solar PV Installations
1980 – 2015
Gigawatts (Cumulative)
250
200
150
100
50
0
1980
1984
1988
1992
1996
2000
2004
2008
2012
2015

LLC Investor Model for Non-Profits

- Takes advantage of 26% tax credit, as non-profits do not pay taxes
- This tax credit will drop to 22% in 2023



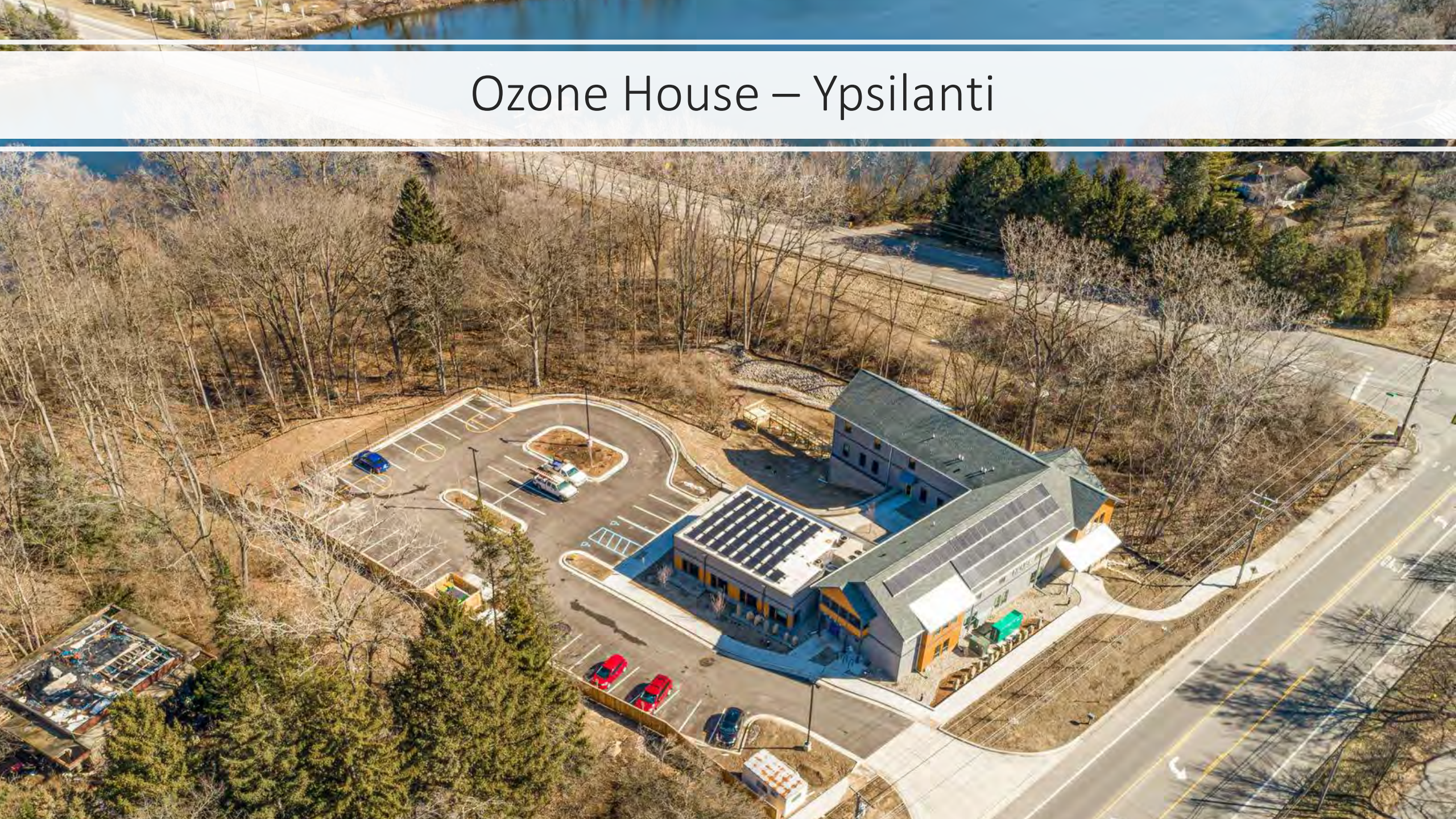
FUMC - Ferndale

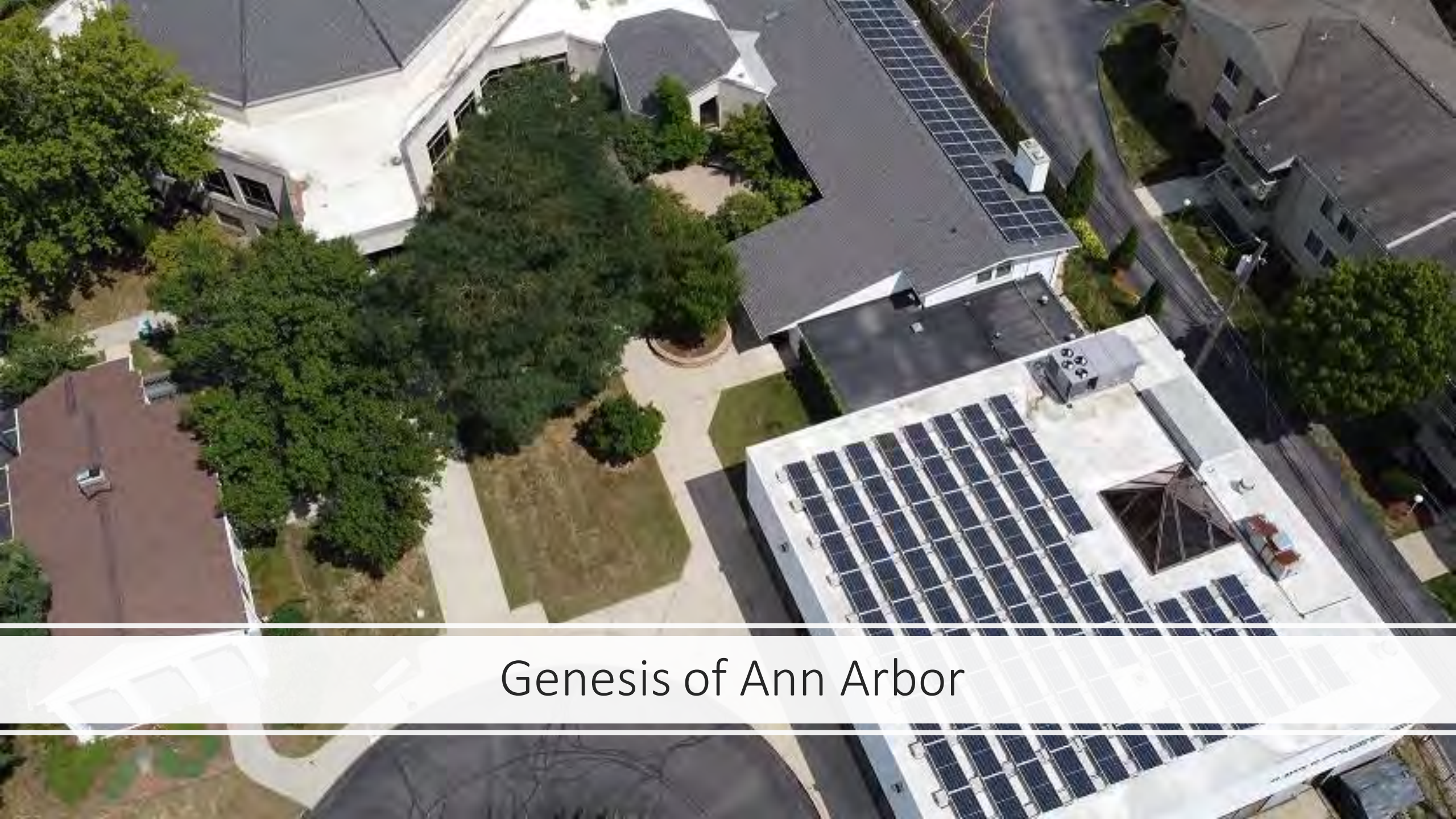


St Peter's Episcopal Church - Detroit

First Congregational Church (FCC – Ann Arbor)

Ozone House – Ypsilanti





Genesis of Ann Arbor

HoW	First United Methodist Church	Seventh-Day Adventist Church/School	First Congregational Church	Ozone House	Genesis	St. Peter's Episcopal Church	Potter's Guild
Location	Ferndale	Ann Arbor	Ann Arbor	Ypsilanti	Ann Arbor	Detroit	Lansing
Sponsor	Diane Cheklich	Scott Nelson	Dan Jacobs	Jan Culbertson	Murray R / David L	Bob Chapman	Barbara Sears
# of Panels	64	80	54	99	160	32	45
kW	19.6	31.2	17.25	30.9	64.0	10.6	14.4
kW/Panel	0.31	0.39	0.32	0.31	0.40	0.33	0.32
Total Investment $	$47,840	$62,965	$55,000	$80,000	$130,000	$27,150	$37,445
$/kW	$2,440.82	$2018	$3,188.41	$2,589.00	$2,031.25	$2,561.32	$2,647
Included costs	$800 for legal fees	None, solar only	$10k for racking; $4k to fund LLC	$4000 to fund LLC; 25 yr. warranty incl. inverter replacement	$10,000 to fund LLC	Includes 25 yr. inverter warranty	$250 tax filing; $375 financial assessment; $100 misc
Install Date	APR 2017	AUG 2019	DEC 2019	JAN 2020	JAN 2020	DEC 2018	APR 2021
% of Electricity	29%	N/A	25%	N/A	31%	25%	95%
Funding	LLC	LLC	LLC	LLC	LLC	LLC	LLC
LLC # Members	1	1	5	4	20	1	8
% of Electric rate	92% of DTE rate	90% of DTE rate	90% of DTE rate	90% of DTE rate	92% of DTE rate	75% of DTE rate	82.5% of Consumers Energy rate
Buyout	FMV at year 20	>6 years	0% loan at year 7	>6 years	>5 years	>5 years	>5 years
HoW Savings	$24K over 20 years	$120K over 25 years	$40K over 20 years	Depends on buyout	$397K over 30 years	$40K over 25 years	$28K over 35 years
Annual ROI for LLC	3.5%	0%	0%	2.0%	2.6%	2.0%	2%
Installer	Srinergy	Homeland Solar	Homeland Solar	Distributed Power	Homeland Solar	Distributed Power	Absolute Environmental Solutions

Totals: 534 Solar Panels; 188 kW; $440K Investment

Solar Gives Us Hope!