



# Michigan Energy Public Forum



TRAVERSE CITY SESSION

APRIL 22, 2013

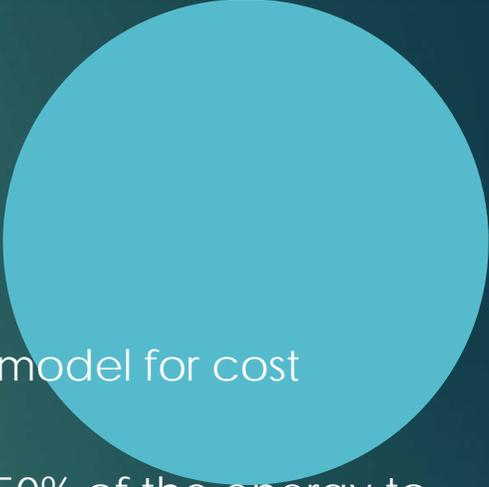
# Tom Gallery, Northport



Leelanau Solar LLC

Leelanau Community Energy LLC

Northport Energy (non-profit)



- ▶ Building local solar projects to establish a workable business model for cost effective solar energy in NW Michigan.
- ▶ LCE built the wind turbine in Northport that is now supplying 50% of the energy to run the local water treatment plant.
- ▶ Northport Energy conducts free or low cost energy audits in Leelanau Township
- ▶ Installed over 150 kw of renewable energy systems last year.
- ▶ Currently working with Habitat for Humanity on 10 net-zero houses in Traverse City



Question #4 in the  
Renewable Energy Section.



4. *What are the predicted costs of new energy generation by type in the future?*

THE NEW NORMAL FOR SOLAR PV

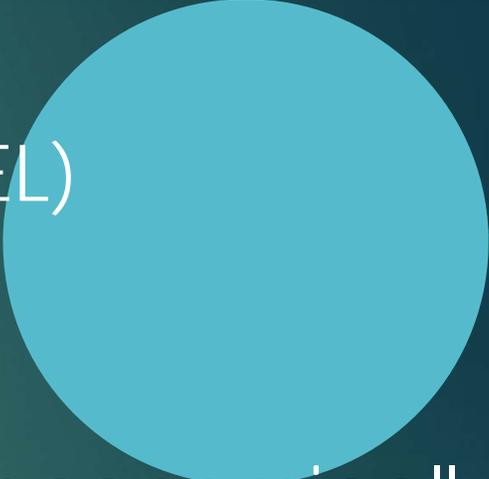
Under \$3 Per Watt Installed



6 kW Northport \$2.47 per watt



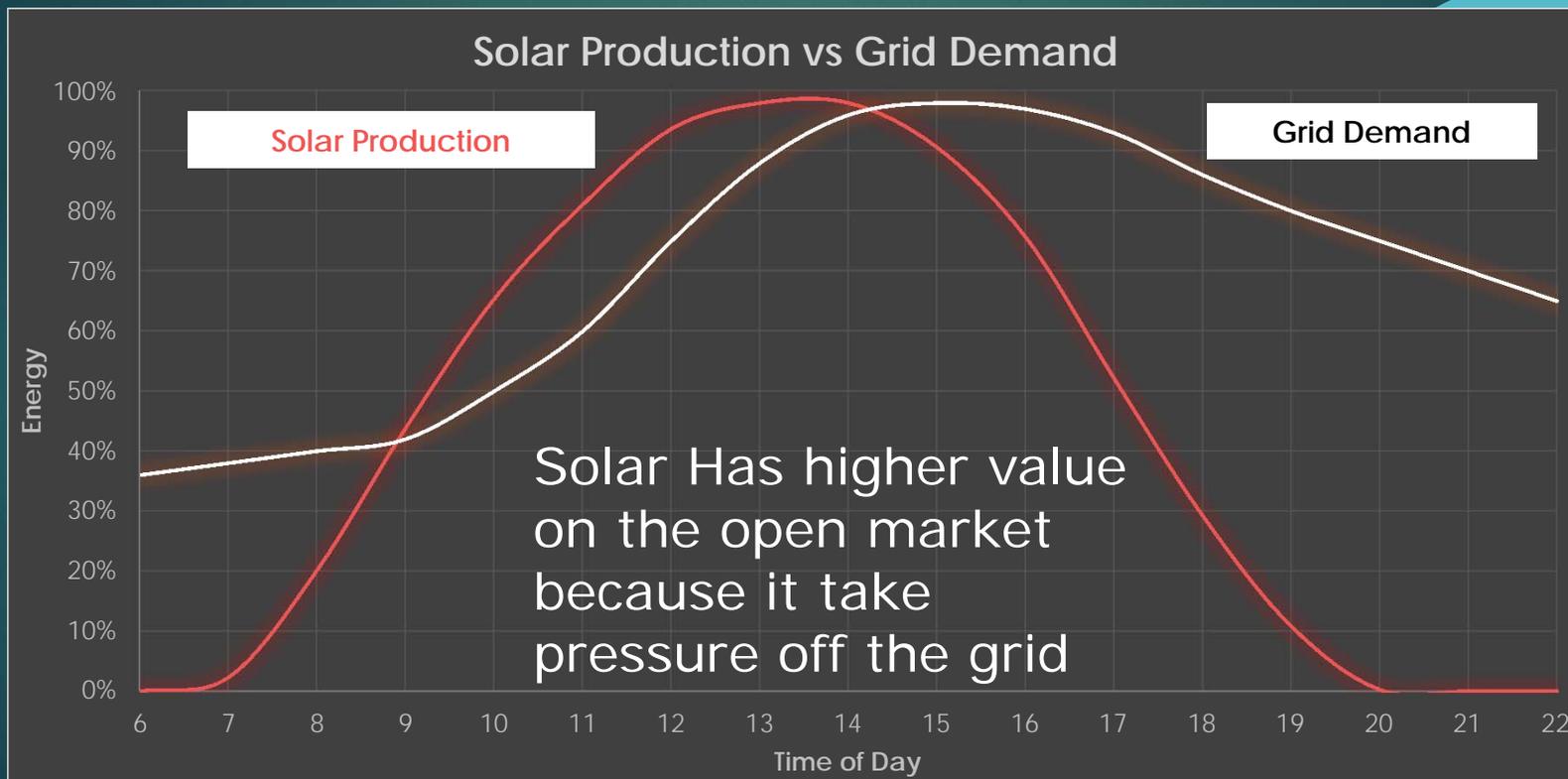
## The "Old Normal" Two Years Ago (2011)

- 
- ▶ \$6 per watt installed residential (NREL)
  - ▶ \$5 per watt installed commercial
  - ▶ 20-30 year payback
  - ▶ Required major incentives to install economically

# Solar PV is Now the “Win-Win” New Source of Energy

- Payback 10 years for Residential (\$2.50-\$2.80 / watt)
- Payback 7-9 years for Commercial (\$2.30 / watt)
- Produces energy on the grid demand cycle
- Prices are expected to remain low and may go lower
- Systems last over 25 years with virtually no maintenance
- Fast build-out and commissioning (1-4 months)

# Produces Energy on the Grid Demand Cycle



# The "Under \$3" Equation

## 8000 watt Residential Rooftop System

▶ Panels	\$0.80	per watt
▶ Inverter	\$0.40	per watt
▶ Racking	\$0.30	per watt
▶ <u>Electrical</u>	<u>\$0.05</u>	<u>per watt</u>
▶ Total Components	\$1.55	per watt

▶ Installation	\$0.75	per watt
▶ Permits	\$0.05	per watt
▶ Design	\$0.05	per watt

▶ Total Installed	\$2.40	per watt (\$19,200)
▶ Net cost after 30% tax credit	= \$13,440	

### Labor

- ▶ 3 people, 3 days = 72 hours
- ▶ Install cost = \$6,000
- ▶ Labor Rate = \$83/hour

### Simple Payback

- ▶ 8800 kwh per year
- ▶ \$0.15 per kwh average rate (10 yr future)
- ▶ \$1,320 average annual energy value

**Simple Payback = \$13440/\$1320 = 10.2 years**

# What Can Michigan Do for Residential Solar?

- ▶ Publish guidelines for homeowners and businesses to understand solar basics and the installation process
- ▶ Expand the current netmetering program to include more generation and higher thresholds for netmetering.
- ▶ Allow meter aggregation for homeowner associations.
- ▶ Encourage and expand the various renewable energy programs that the utilities now offer.
  - Consumers' "Experimental Advanced Renewable Program" (EARP)
  - DTE's "Solar Currents"



# What Can Michigan Do for Farm and Commercial Solar?

- Allow meter aggregation for farms, businesses and homeowner associations
- Increase the “true” netmetering threshold from 20 kw to 150 kw



THE NEW NORMAL FOR SOLAR PV

Under \$3 Per Watt Installed



8.8 KW  
TRAVERSE CITY  
\$2.67 PER WATT