SOLAR FINANCING TOOLS

Fritz Ebinger, J.D.

Clean Energy Resource Teams (CERTs)

July 2019

How does CERTs help?

Hands-on assistance

For cities, counties, utilities, farmers, businesses, and other organizations looking to make a change

Practical steps to clean energy

Resources for getting started, moving forward, and completing projects

Learning opportunities

We host events, create resources, and highlight clean energy stories and jobs

CERTs Partners

Regional Sustainable Development Partnerships
University of Minnesota Extension

Great Plains Institute

SRDC

MN Commerce Department

How does CERTs work?

STAFF

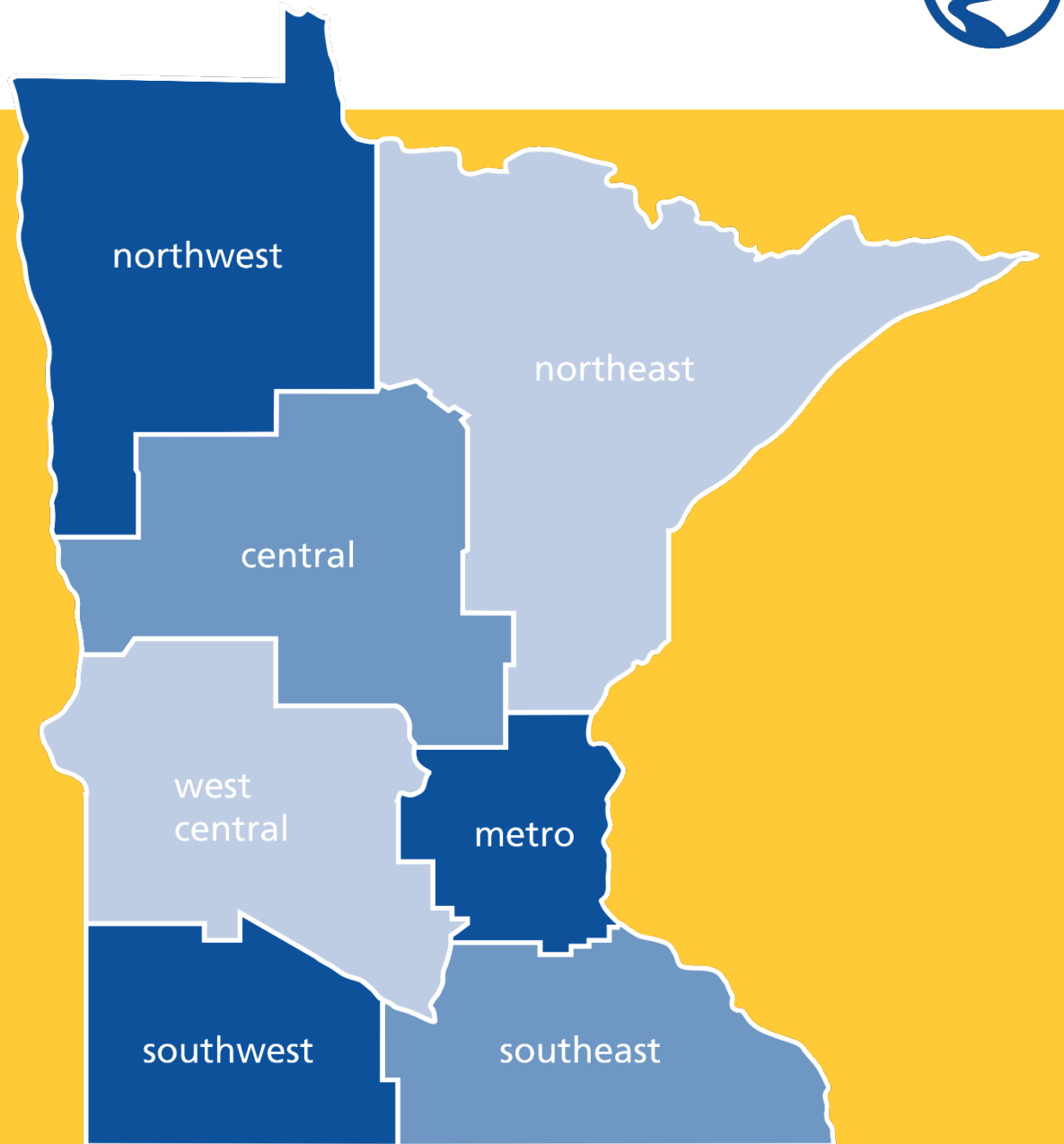
Regional coordinators and statewide support

STEERING COMMITTEES

One per region; governing body for regional team

REGIONAL TEAMS

Anyone can join; broad range of skills, interests, and backgrounds



Sharing farm case studies

MN ENERGY
STORIES
mncerts.org/blog

Zumbrota Farm harvesting solar power to reduce energy costs

Ronningen Dairy Farm adds solar PV to their West Concord operation

Jorgenson Hog Farm in Westbrook, MN cashes in with wind, solar PV

Family farm invests in renewable energy, saves barn

Learning about solar energy at Featherstone Farm

Solar exceeds expectations at Guentzel Family Farms in Eagle Lake

Hoffman Farms near Chatfield saves money with utility rebates

The Popps are harvesting solar and wind energy on their farm

Turkey farmers learn about solar air and LED lighting technologies

Langmo Bros. Farm pilots LED lighting for turkey barns

Solar PV Curriculum & Simple Steps

mncerts.org/solar

Renewable Energy for Greater MN

We offer FREE assistance to Farmers and Small Businesses for:

- **Solar site assessments and financial modeling**
- **Application support for grants and loans**
- **Guidance on federal tax credits, depreciation**
- **Financing opportunities: Property-Assessed Clean Energy (PACE)**

Renewable Energy for Greater Minnesota

mncerts.org/greatrenewables

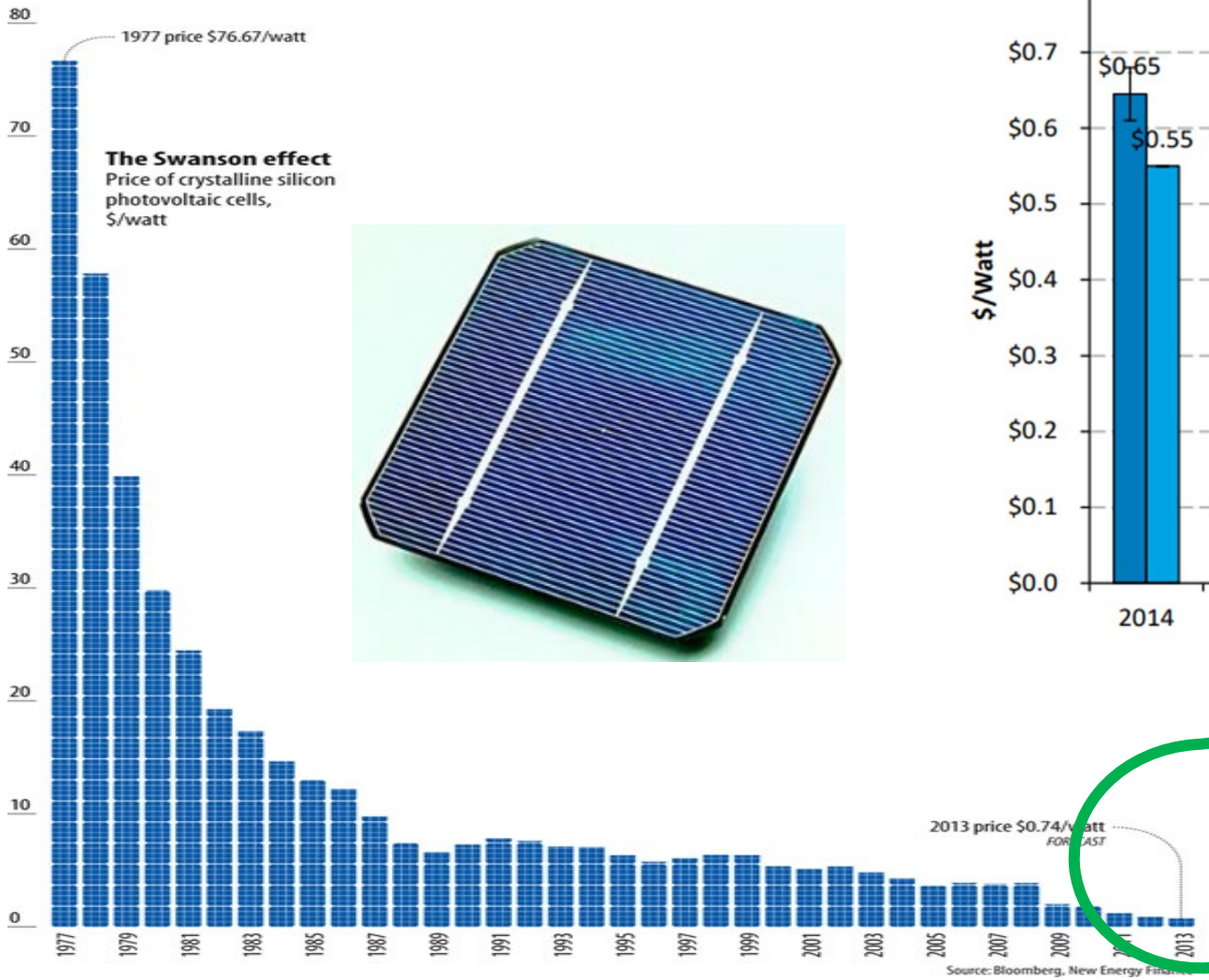
Commercial Turnkey Cost in MN?

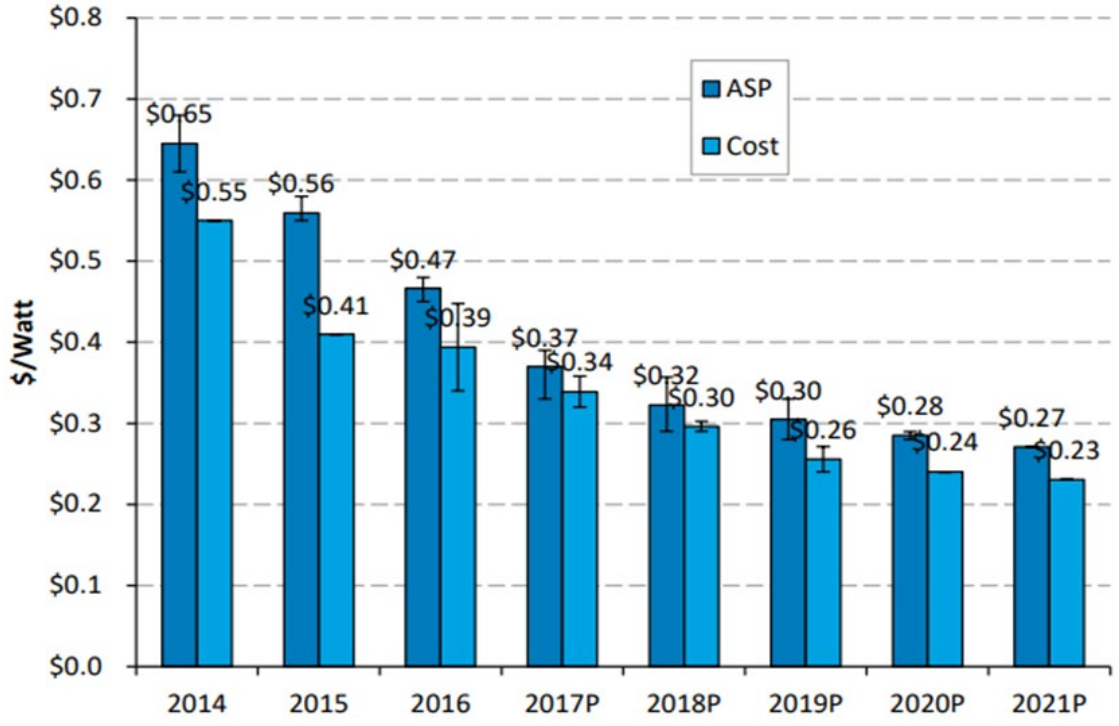
"Installed cost per watt"

- Ground-mount Fixed Tilt: $2.20 - $2.40 per watt
- Building – Rack/Ballast: $2.95 - $3.15 per watt
- Building – Flush-mount: $2.65 - $2.85 per watt

Sources: St. Paul Port Authority PACE Loan amounts Jan. 2019 – June 2019; REAP Projects

Solar Cell Cost: 1977 - Present

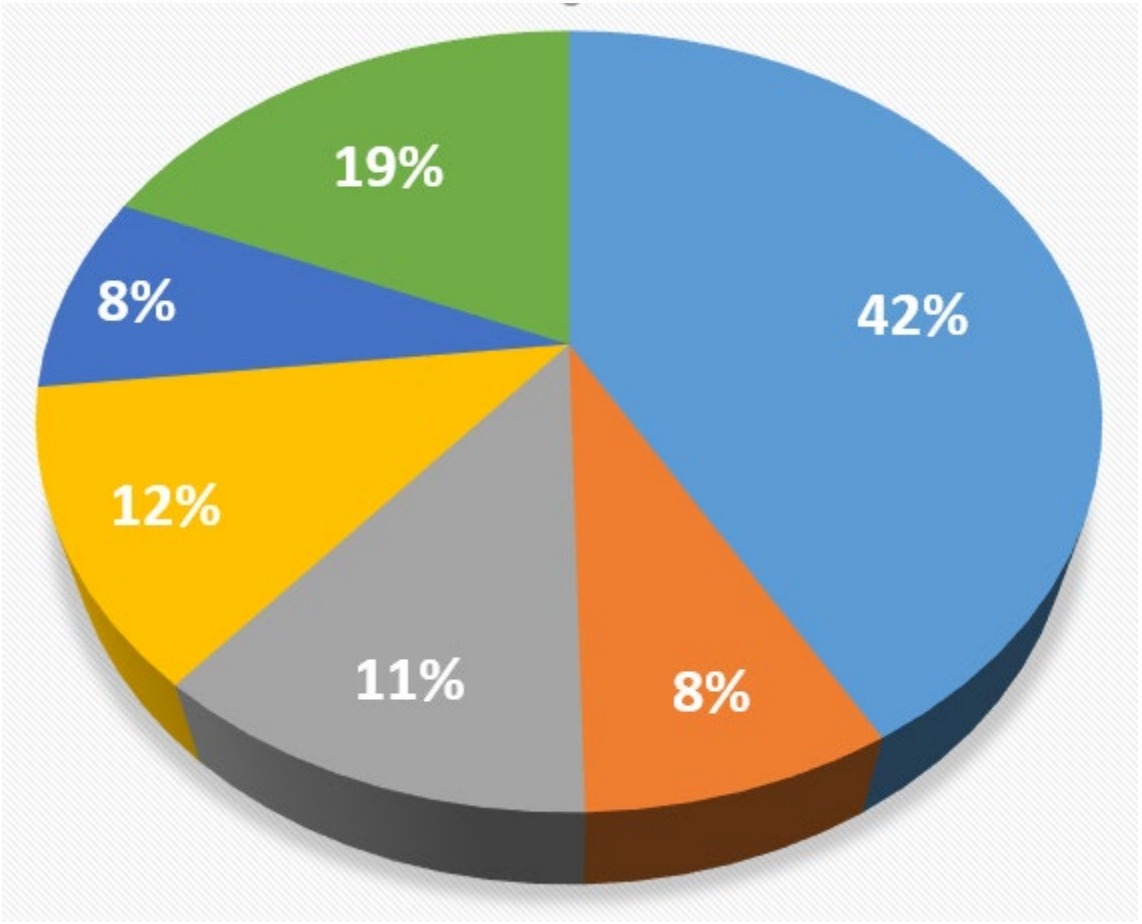




Sources: Bloomberg New Energy Finance; NREL, Q3/Q4 2018 Solar Industry Update May 2018

TURN-KEY COST BREAKDOWN

- 42% -- $1.06 Overhead, Net Profit, Marketing, Inspection & Permitting
- 8% -- $0.20 Installation Labor
- 11% -- $0.29 Supply Chain Costs
- 12% -- $0.31 Balance of System
- 8% -- $0.21 Inverter
- 19% -- $0.47 Module



**Based on a $2.54/watt

Source: NREL, U.S. Solar Photovoltaic Cost Benchmark Q1 2018 (Nov. 2018)

Financial Tool: Federal Income Tax Credit

- 30% Fed. Energy Investment Income Tax Credit (the 30% ITC)
- 1 year carry-back, 20 year carry-forward period (26 U.S.C. §39)
- Extended at 30% through **2019**, then tapers to 26%...22%...10%

www.mncerts.org/taxcredits

Accelerated Depreciation (MACRS)

- Cost-of-doing-business expense taken as a tax credit over the life of the equipment
- 5-year Property Schedule (IRS Pub. 946)
- Depreciable <u>adjusted basis</u> starts at 85% of total cost
- Trump Tax Bill allows for 100% bonus depreciation in year placed in service!

www.mncerts.org/macrs

**26 U.S.C. §50(c) (2018)

GRANT: USDA-REAP

- **Rural Small Business - town with less than 50,000 people**
- **Farmer – derive more than 50% of your income from agricultural production (crops, livestock, timber, etc.)**

Tangletown Gardens / Wise Acre Farm – Plato, MN

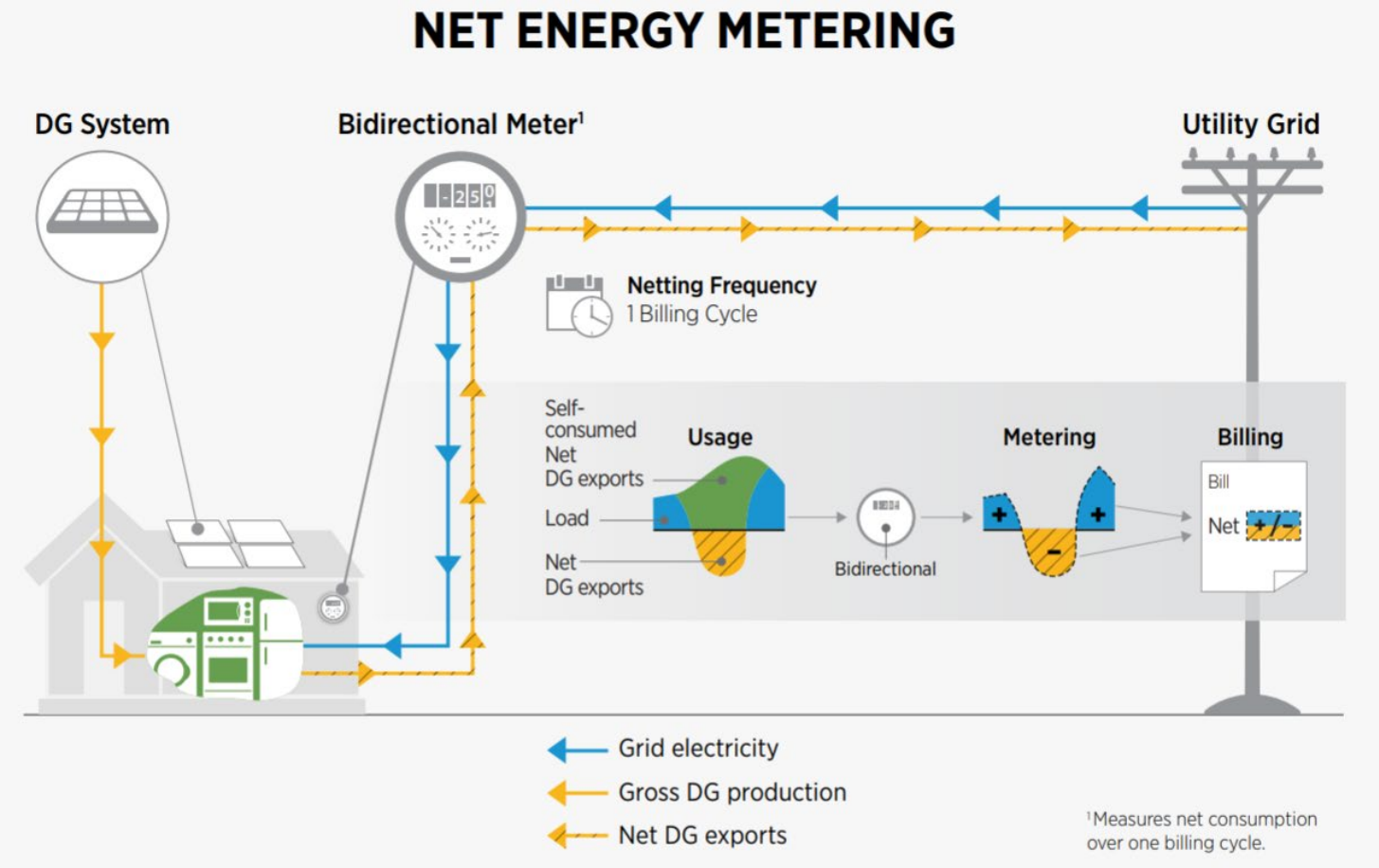
GRANT: USDA-REAP

- 25% of project cost
- Two deadlines:
  - October 31, 2019
  - April 30, 2020
- Start project <u>after application is submitted</u>

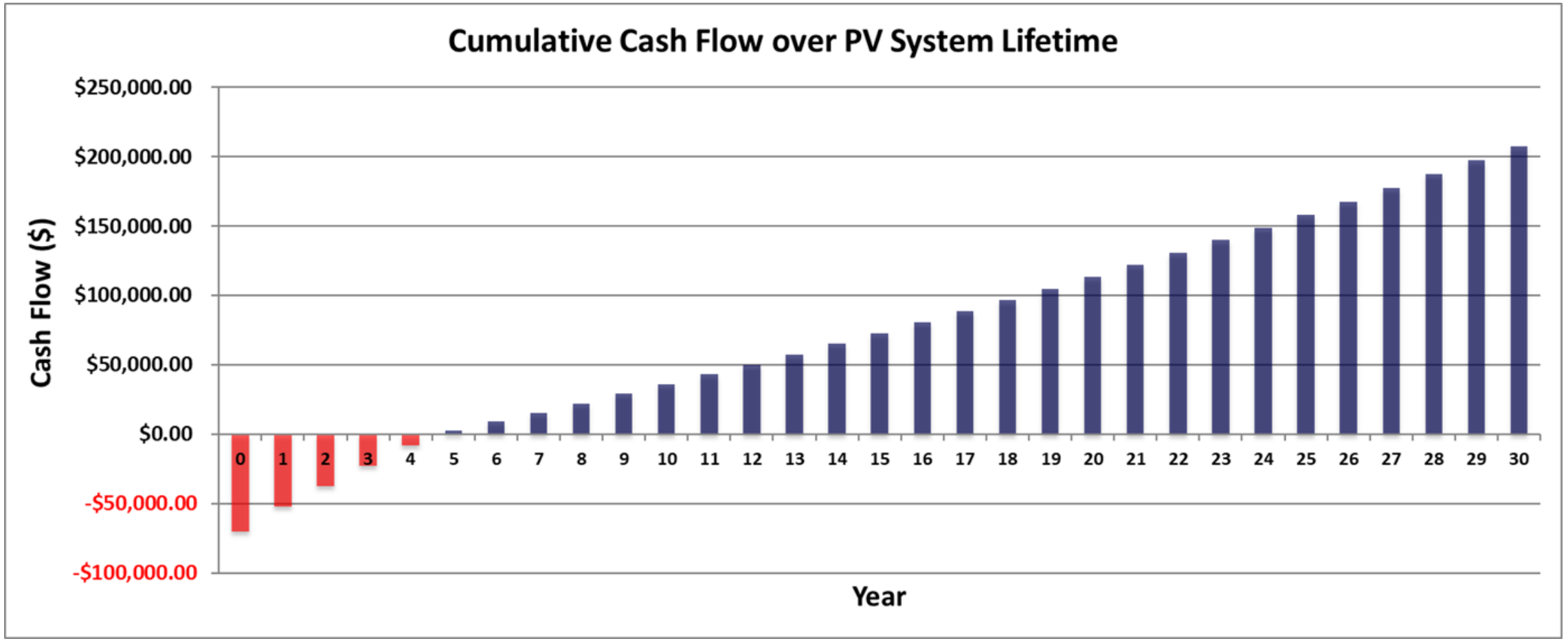
Turkey Farm by CB Solar – Washington, IA

Net Metering

- Solar offsets consumption “behind the meter”
- Excess production is credited at the “average retail cost of energy” rate
- Grid Access Fee over 3.5 KW – depends on co-op



30% Tax Credit ↯ 5-Year Depreciation ↯ 10¢ kWh Rate ↯ 40 kW DC array ↯ $2.50/Watt



Want to Follow Up?

Fritz Ebinger

Program Manager – Rural Energy Nerd

Ebing007@umn.edu

612-626-1028