



ROADBLOCKS TO RENEWABLE ENERGY ON FARMS

Michigan's Netmetering and Interconnection policy



**THE #1 ROADBLOCK TO EXPANDING
RENEWABLE ENERGY ON FARMS IS
MICHIGAN'S CURRENT
*NETMETERING POLICY***

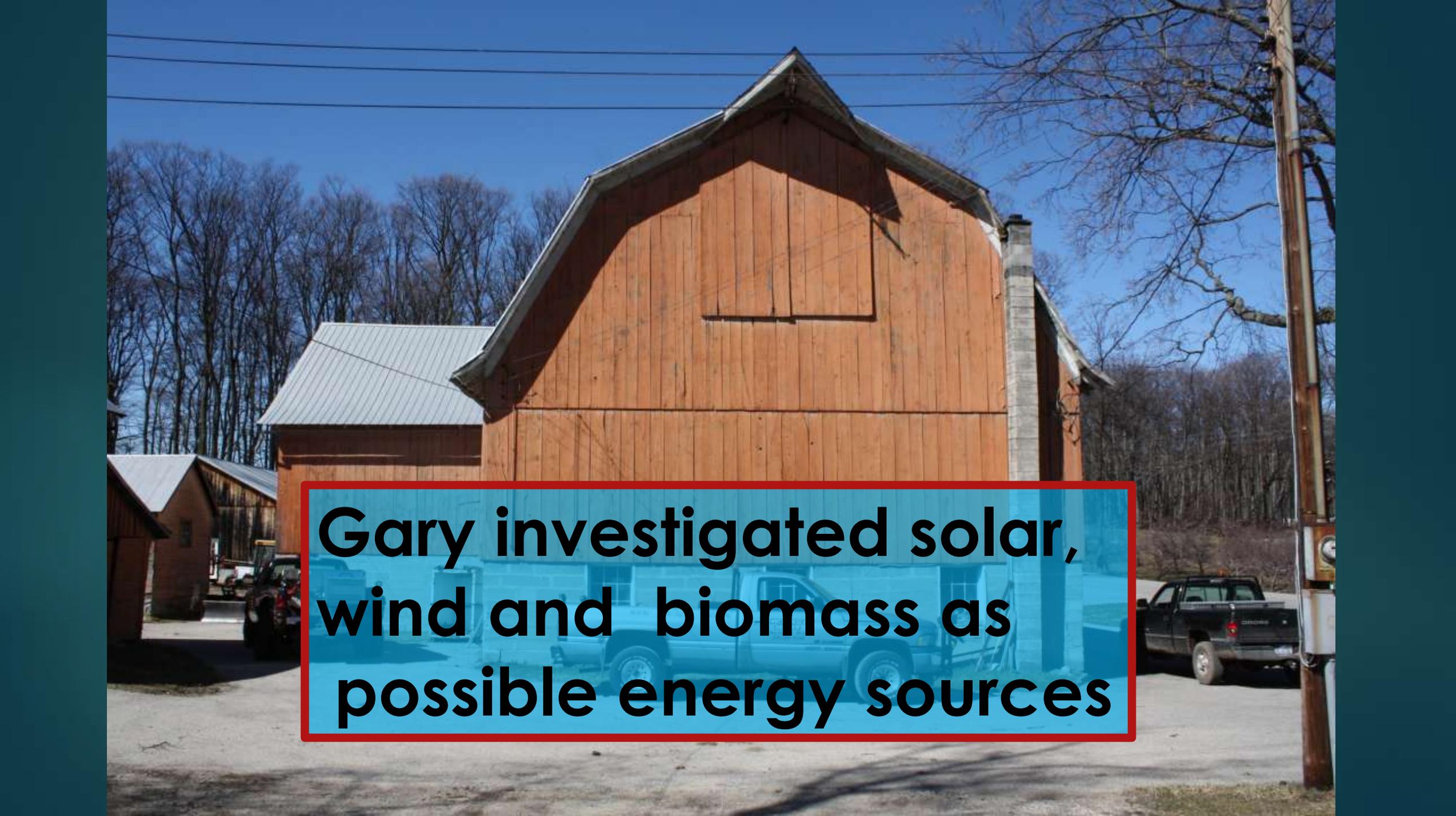
The solution is
to allow **Meter Aggregation**

None Have Proven Feasible

- ▶ Cost is not an issue –
 - **Most farms have excellent wind and solar resources.**
 - **Systems would pay back in less than 10 years**
- ▶ Not feasible because of the MPSC and utility requirements for complex interconnection.

Gary Fredricksons Farm





**Gary investigated solar,
wind and biomass as
possible energy sources**

A photograph of a wooden utility pole with a transformer and power lines. The pole is vertical and has a horizontal crossarm. A transformer is mounted on the pole, and several power lines are strung across it. The background is a clear blue sky, and some bare tree branches are visible in the upper left corner.

**He has 3 phase power
at his home pole.**

Meter # 1





Pumps---

**Garys cooling pad for his
cherry operation.**



Pump # 2-----

Pump # 1-----

A photograph of a utility pole with a meter and a control box. The pole is made of weathered wood and is surrounded by bare, thin branches of trees. The meter is a white, circular device with a digital display, mounted on a grey metal box. Below it is another grey metal box, likely a control box for pumps. The background shows a field of dry grass and more trees under a clear blue sky.

Meter # 2 for pumps.

A photograph of a workers housing unit. The building is a long, single-story structure with white walls and a brown roof. It is situated in a rural area with many bare trees in the background. In the foreground, there is a utility pole with a transformer and a dirt road. The text "Workers housing unit" is overlaid on the bottom of the image.

Workers housing unit



Meter # 3

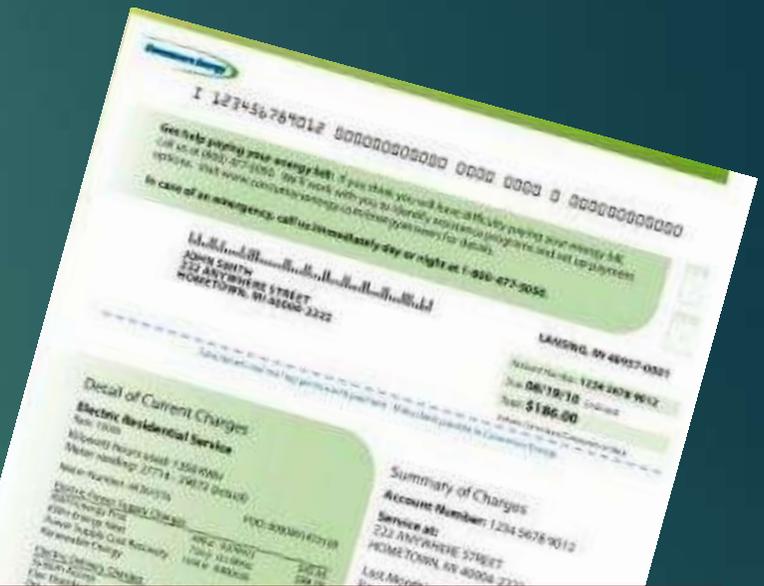
**Meter on back of
housing unit.**



Extended family home



Meter # 4



The farmer is billed separately for each service. All the bills come to the same address at the same time. All are paid with one check.

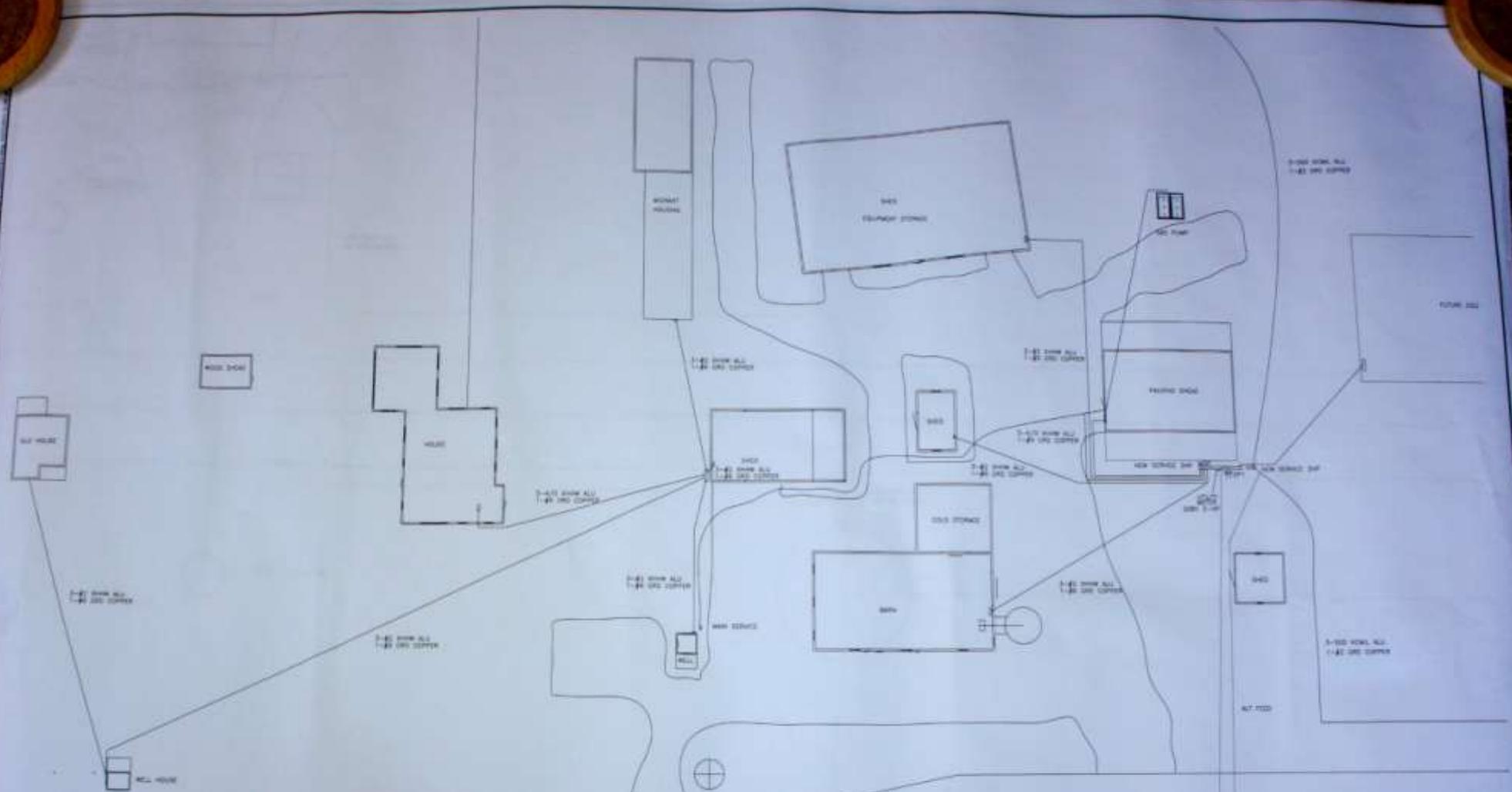


Current Netmetering – One Renewable Energy Device per Meter

- 
- UP TO 20 KW PER METER
 - NO RENEWABLE ENERGY SOURCE MAY PRODUCE MORE THAN THAT METER'S ANNUAL USAGE.

The Problem

Energy devices like solar and wind cannot always be placed where the energy is most needed.



Electrical engineering plan (over \$2000)

Ed Budd Co. Inc.
DESIGN SERVICES
1891 E. Apple Rd. Center, MI 49821
PHONE: (231) 218-1701 edbudd@gmail.com

SITE ELECTRICAL
SCALE: 1"=80'

DATE	REV	BY	CHK	APP
	001	GB		
	002	AS NOTED		
	003			
	004			
PROJECT: GARY FREDRICKSON FARM ADDRESS: 6360 N CHRISTIANSON RD NORTHPORT MI				

A man wearing sunglasses and a high-visibility safety vest stands in front of a large wooden barn. The barn has a gambrel roof and is made of vertical wooden planks. In the background, there are bare trees and a utility pole with power lines. A white pickup truck is partially visible behind the barn. The scene is set outdoors on a clear day.

**Cost to install transformers and
rewire all meter interconnections to
meet interconnection requirements:
Over \$20,000+.**

*High Usage
Poor Resource*

*Low Usage
Good Resource*

3000 ft



*High Usage
Poor Resource*



Utility Line



The Solution – “Virtual Aggregation”

- ▶ Allow the owner to connect a renewable energy source to any meter on his account
- ▶ Aggregate the energy production and energy use among all meters in the account
- ▶ Netmeter the total production and total usage
- ▶ Set the total netmetering limit to 20kw times the number of meters

This is only an accounting change for the Utility!

It requires no physical infrastructure changes by the utility or customer



Meter Aggregation (Virtual Aggregation)

The solution to creating sustainable
farms in Michigan



Thank You for Listening.

AI Noftz

