

# SOLAR LEASING 101:

## *Utility Scale Solar Development Trends*



**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

National Association of Community  
Development Extension Professionals

June 1, 2020

## Learning Objectives

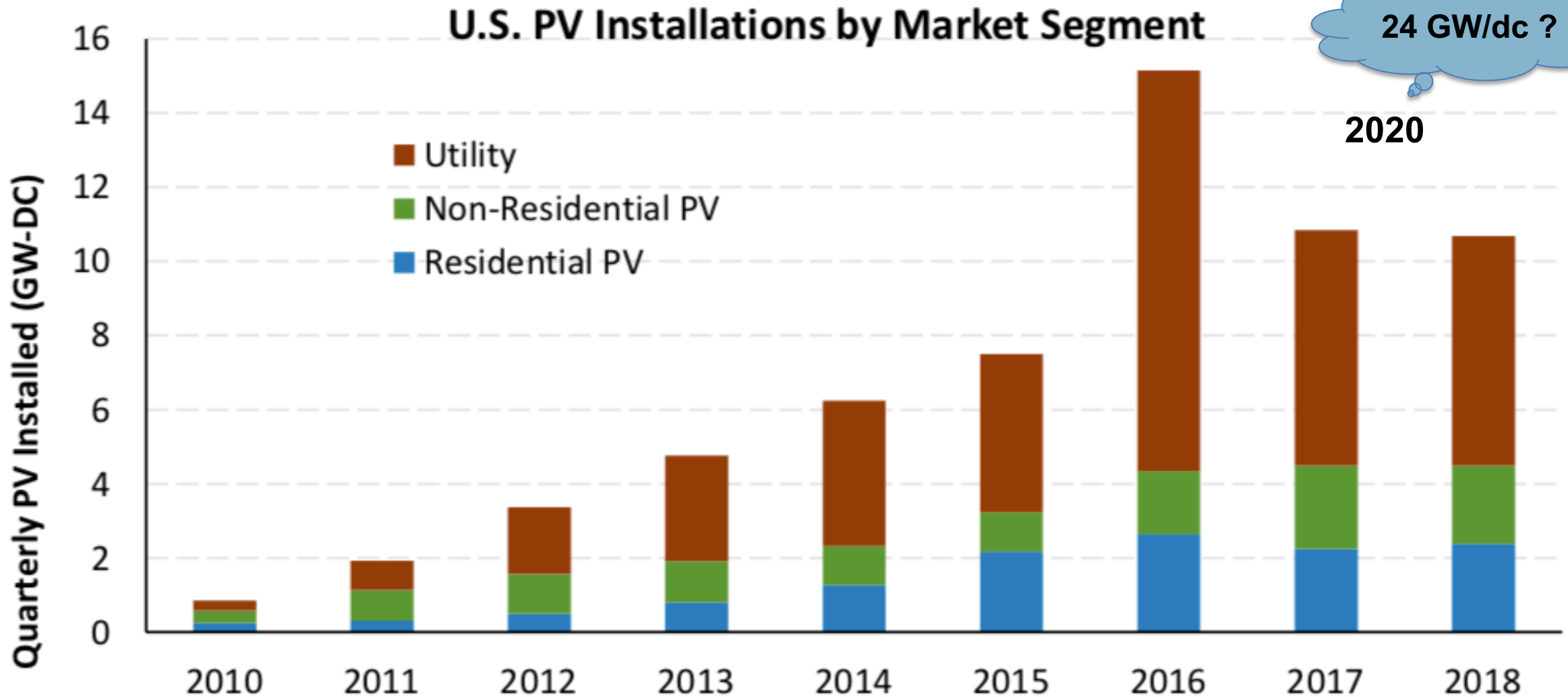
- Utility Scale Photovoltaic (PV) Solar Trends
- Solar and Land Use
- Program Overview
- Closing Thoughts and Questions





# Utility Scale Photovoltaic (PV) Solar Trends

# U.S. Solar Installations



Sources: Wood Mackenzie Power & Renewables /SEIA: U.S. Solar Market Insight 2018 Year-in-Review.

# Federal Investment Tax Credit for Commercial Solar Photovoltaics

The solar investment tax credit (ITC) is a tax credit that can be claimed on federal corporate income taxes against the eligible cost of a PV solar system.

30%

- Construction before December 31, **2019**

26%

- Construction before December 31, **2020**

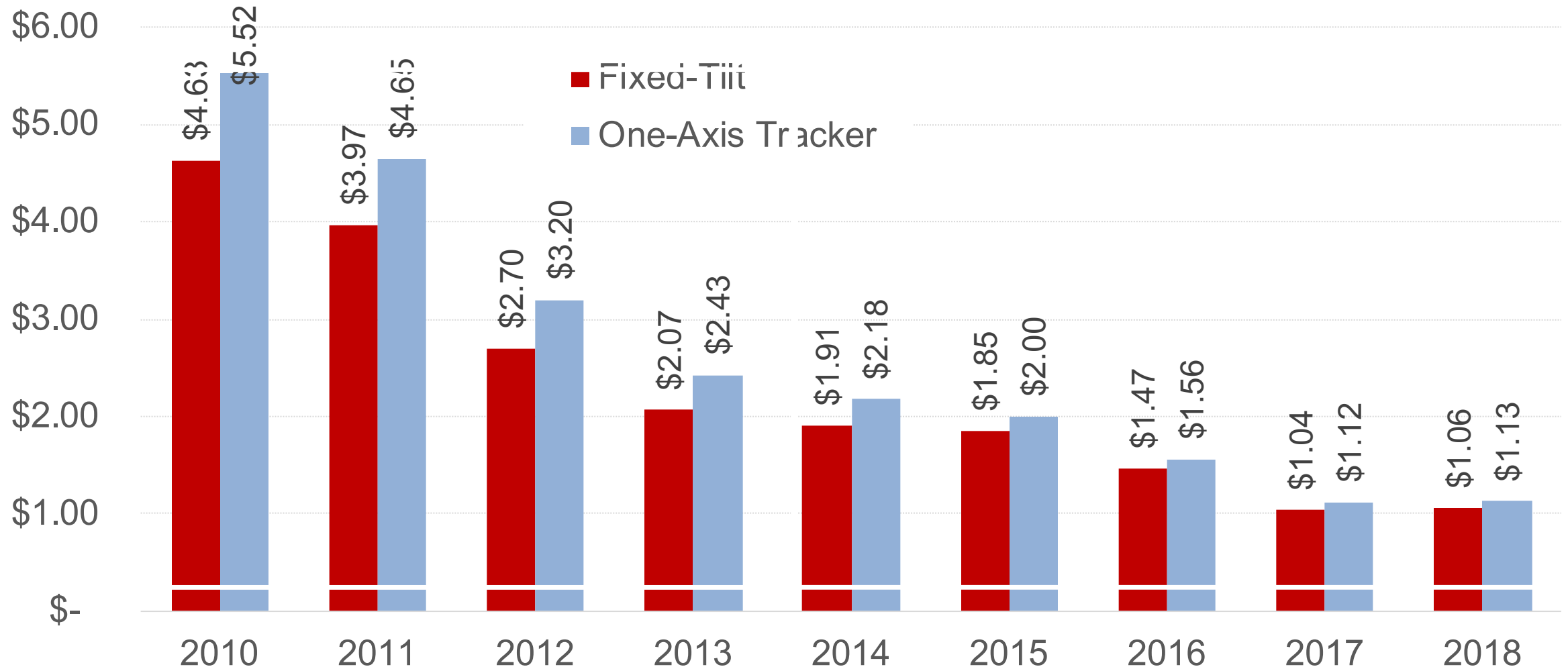
22%

- Construction before December 31, **2021**

10%

- Construction after December 31, **2021**

# NREL Solar System Installation Cost \$ Per DC/Watt (Inflation Adjusted), Q4 2010–Q1 2018





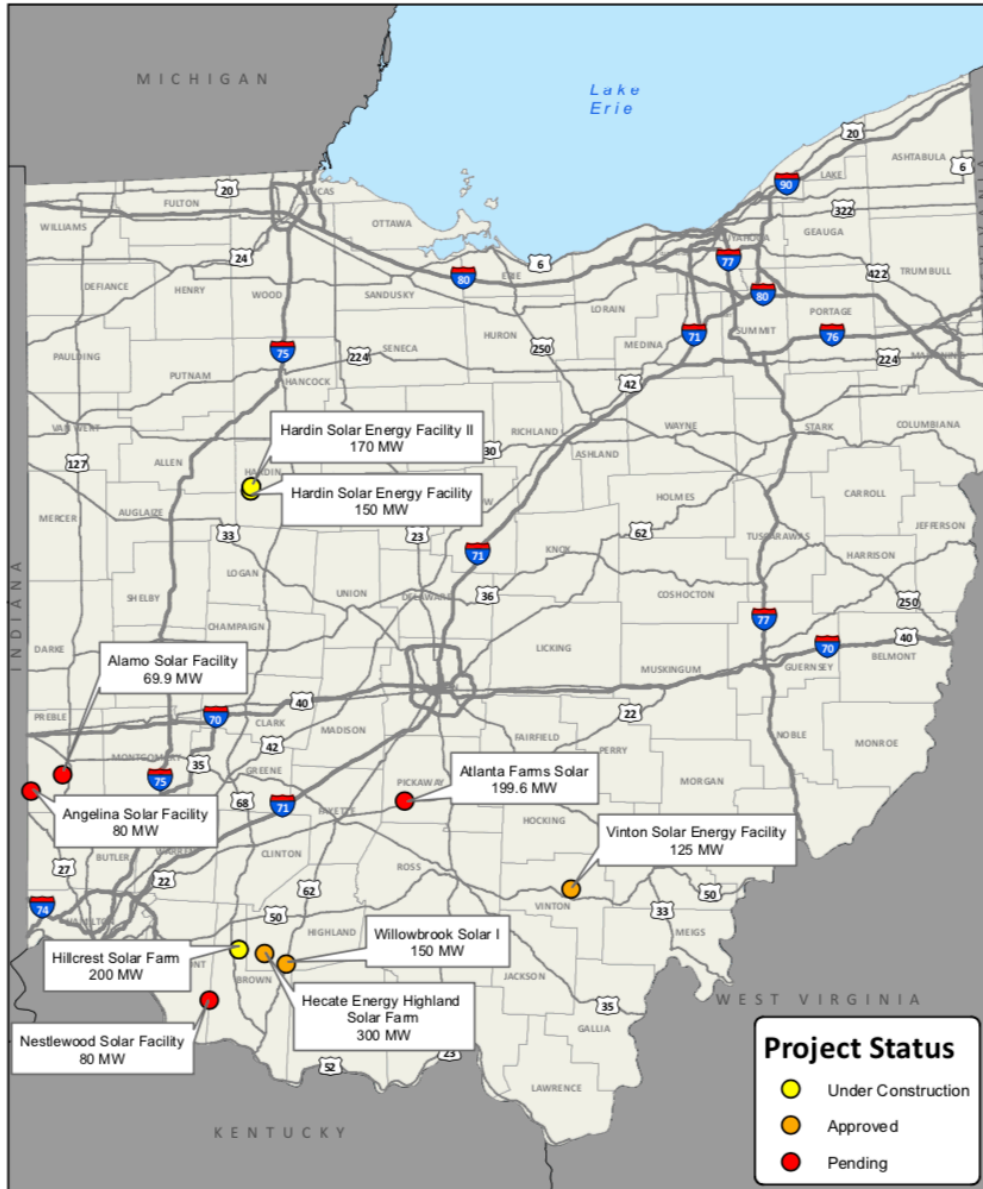
# Solar and Land Use



# Wyandot County Solar Project (12 Megawatts DC / 83 Acres)



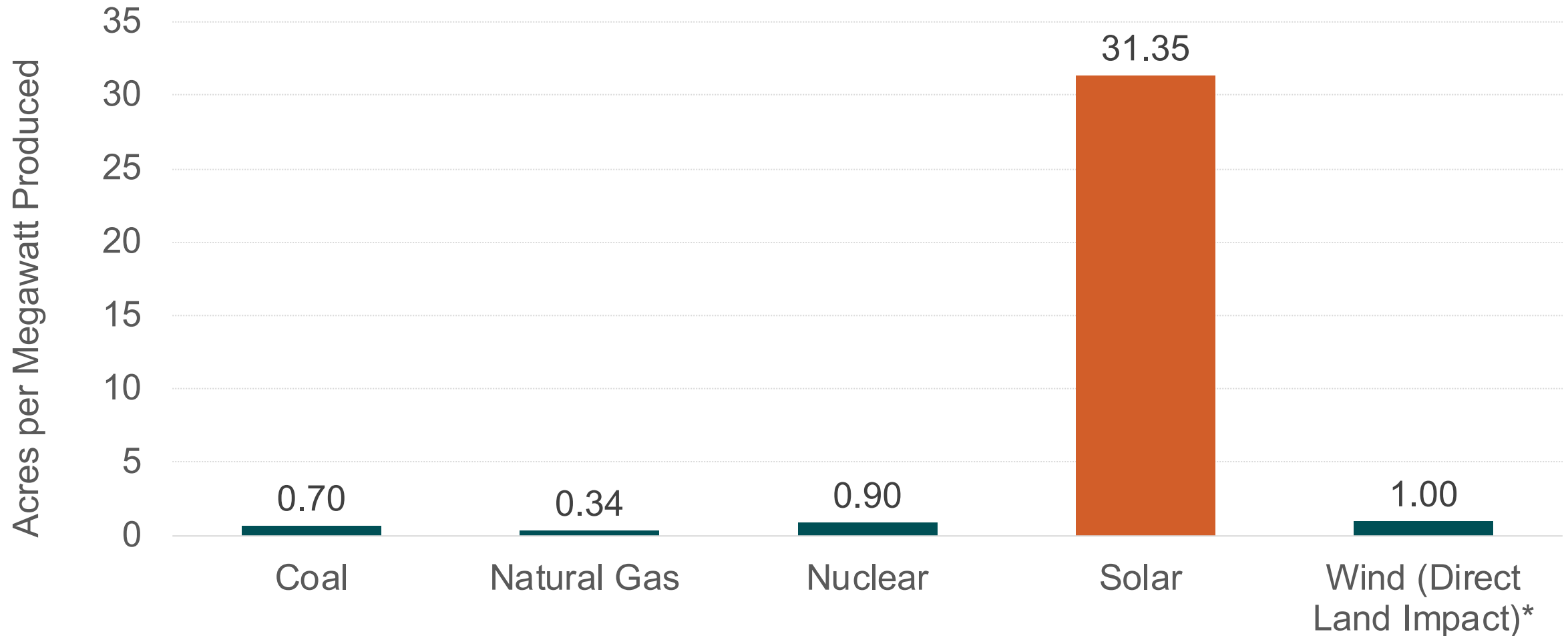




# Utility Solar Development In Ohio

Project Name	Size (MW)	Acres
Hardin Solar	150 MW	1,115
Hardin II	170 MW	3,297
Vinton Solar	125 MW	1,950
Hillcrest Solar	200 MW	2,100
Willowbrook I	150 MW	2,200
Hecate Highland	300 MW	3,300
Nestlewood	80 MW	610
Alamo	70 MW	1,002
Angelina	80 MW	934
Big Plains	196 MW	1,500
Madison Fields	180 MW	TBD
Atlanta Farms	200 MW	2,276

## Energy Plant Land Use and Electricity Production (Adjusted For Capacity Factor)



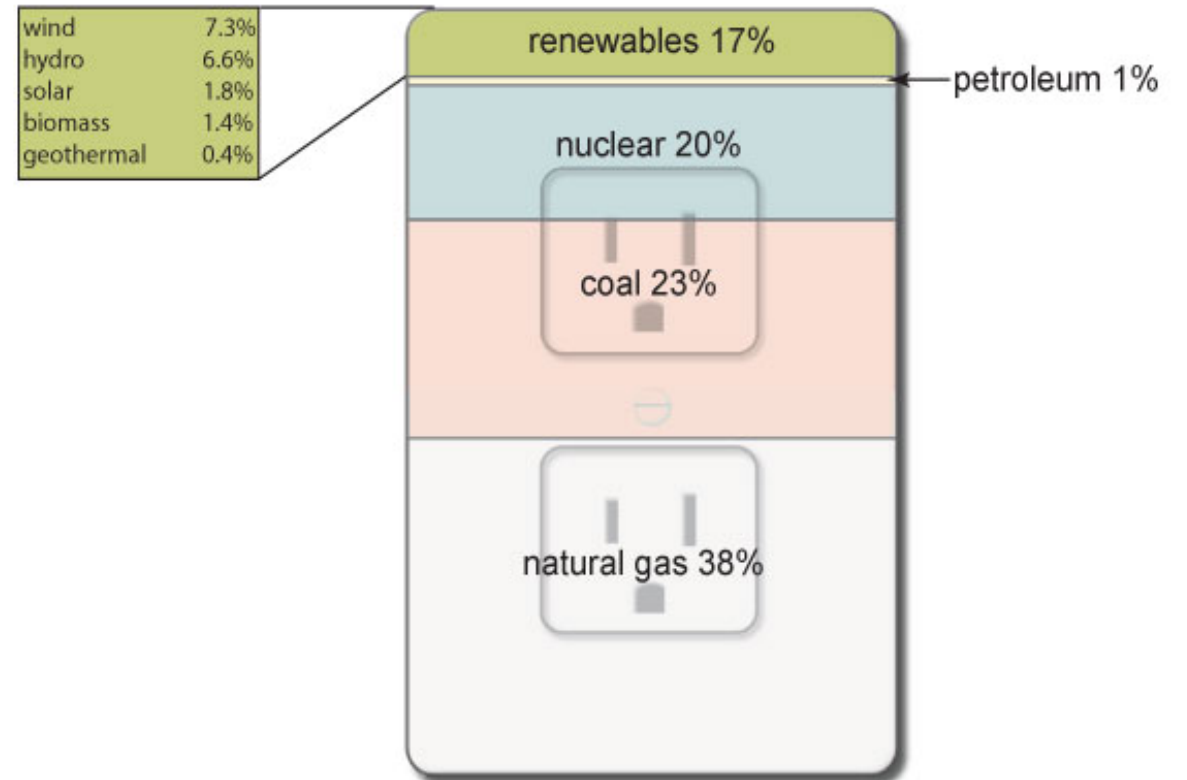
Source: The Footprint Of Energy: Land Use Of U.S. Electricity Production . (2017).  
Strata Group At Utah State University



# Solar Energy Generation Land Use Requirements

- The U.S. currently has 274 GW of coal-fired generating capacity (274,000 megawatts).

**Sources of U.S. electricity generation, 2019**  
Total = 4.12 trillion kilowatthours



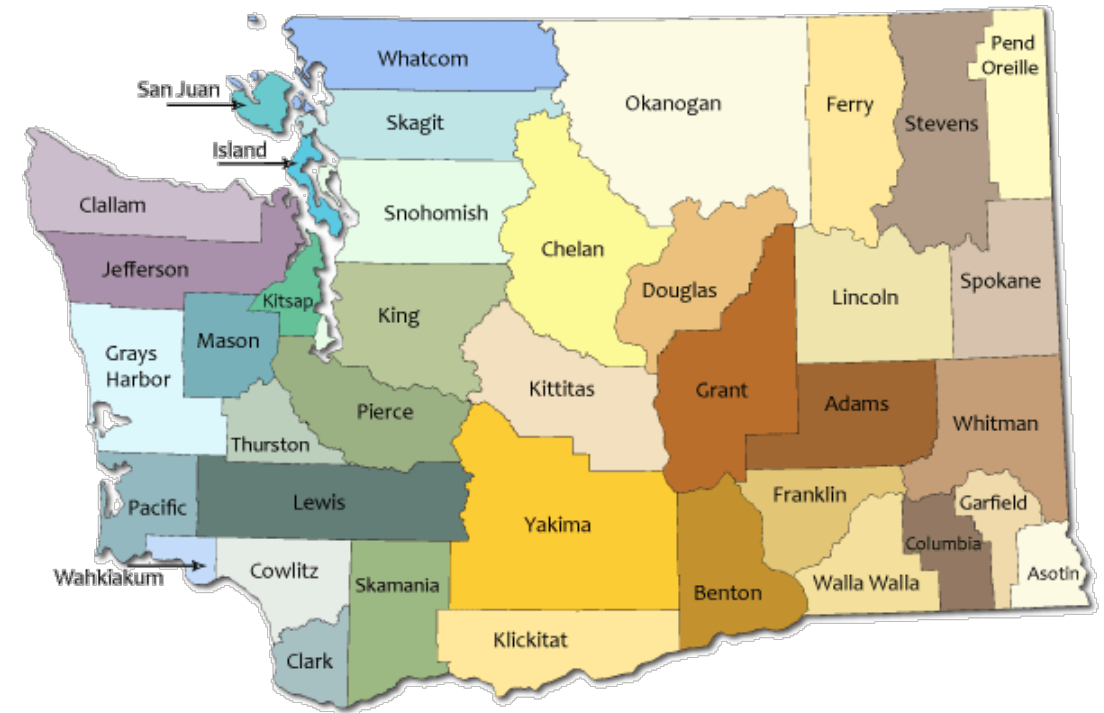
Note: Electricity generation from utility-scale facilities. Sum of percentages may not equal 100% because of independent rounding.

Source: U.S. Energy Information Administration, *Electric Power Monthly*, February 2020, preliminary data



# Solar Energy Generation Land Use Requirements

- The U.S. currently has 274 GW of coal-fired generating capacity (274,000 megawatts).
- For solar to completely to replace 274 GW of coal, it would require 42,213,125 acres (65,958 Sq. Miles) of land equal to the size of the entire state of Washington (66,544 Sq. Miles).





# Program Overview: Solar Leasing 101

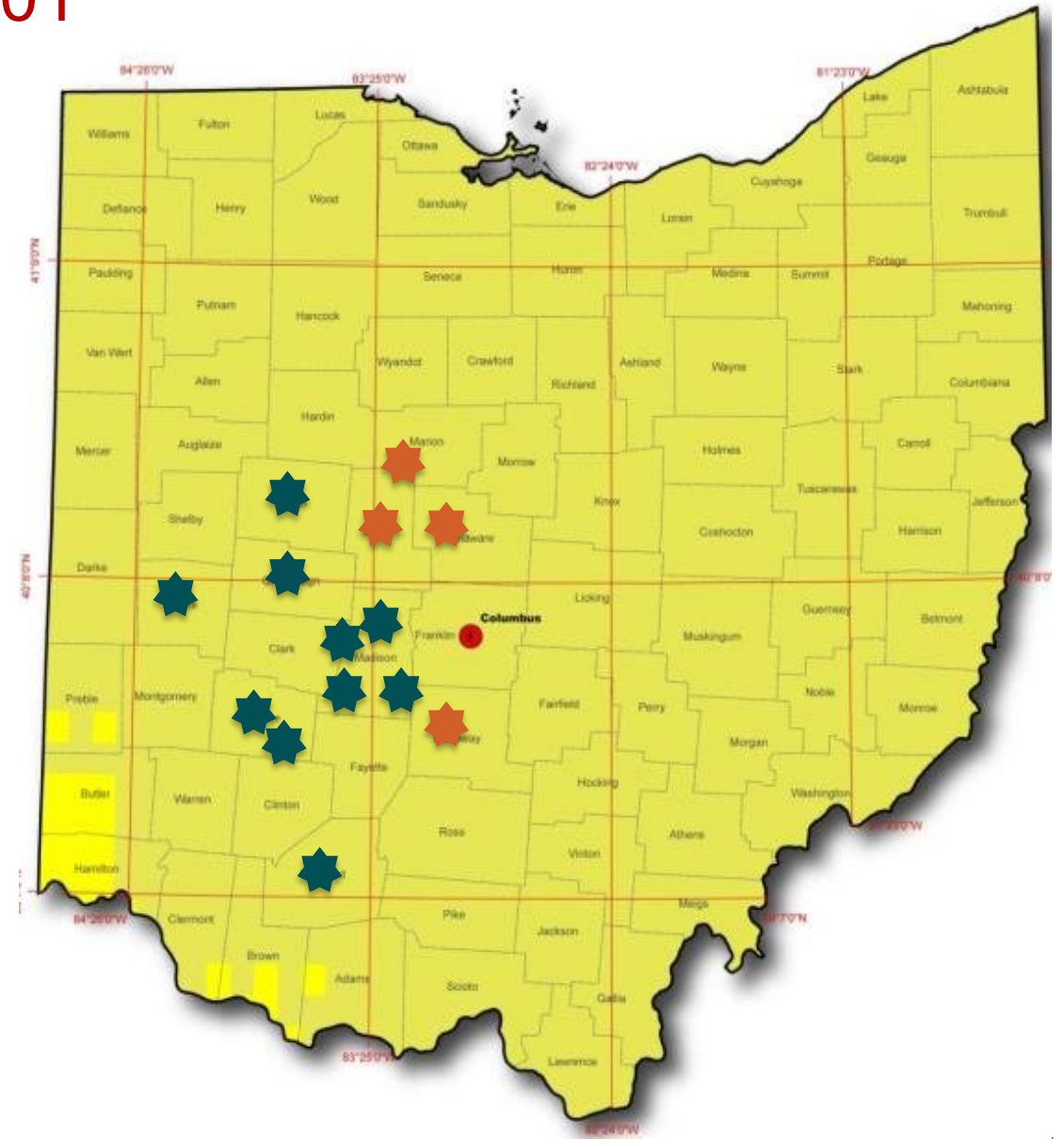
# Program Overview – Solar Leasing 101

- In 2018, we started to receive a lot of phone calls from farmers who were contacted to lease ground.
- An OSU team was developed, and program materials were finalized in August 2019.

★ 2019-2020 Programs delivered = 10

– Total participants = 353

★ 2020 Programs cancelled = 4






# Resources – Utility Scale Solar Development And Solar Leasing

- Law Bulletin – Solar Leasing Checklist (3 pages)
- Farmland Owners Guide to Solar Leasing (43 pages)
- Presentation Materials
- Written and Electronic Program Evaluation Tool

## Additional Resources in Process

- Utility Scale Solar Economic Impact Analysis
- Alternative Solar Vegetation Management



**Ohio Farmland Owner's Guide to Solar Leasing**

Peggy Kirk Hall  
Associate Professor & Director  
Agricultural & Resource Law Program  
Ohio State University Extension

Evin Bachelor  
Law Fellow  
Agricultural & Resource Law Program  
Ohio State University Extension

THE OHIO STATE UNIVERSITY  
COLLEGE OF FOOD, AGRICULTURAL  
AND ENVIRONMENTAL SCIENCES

NATIONAL AGRICULTURAL  
LAW CENTER

USDA United States  
Department of  
Agriculture  
National Agricultural Library

CFAES OHIO STATE UNIVERSITY EXTENSION

**Law Bulletin**

Law you need to know from OSU Extension's Farm Office June 2019

**Leasing the Farm for Solar: Steps to Take Before Signing**

3. Re-read your lease. Look if it contains the following provisions, and think about what it says about each:

- \_\_\_ The term/how long the lease lasts
- \_\_\_ An option to renew at the developer's discretion
- \_\_\_ A description of the project phases, and when each phase begins and ends
- \_\_\_ A description of the premises
- \_\_\_ The types of easements being granted
- \_\_\_ The responsibilities of the landowner
- \_\_\_ Limitations on owner improvements, such as limits on the construction of new buildings
- \_\_\_ How compensation will be calculated
- \_\_\_ Whether the solar energy developer will compensate for crop damages, and if so, how that will be calculated
- \_\_\_ Confidentiality requirements
- \_\_\_ Responsibility for property maintenance, such as mowing
- \_\_\_ What measures will the solar energy developer take to clean up and restore the property after the lease has ended, and whether it will establish a bond to pay for the clean up
- \_\_\_ Whether the solar energy developer will compensate the landowner for removing the land from CAJL
- \_\_\_ What steps the solar energy developer will take so that the land will again be eligible for CAJL after the lease has ended
- \_\_\_ Hunting rights on the leased property
- \_\_\_ Conservation practices
- \_\_\_ Mineral rights
- \_\_\_ Warranty of title
- \_\_\_ Hazardous material
- \_\_\_ Indemnity
- \_\_\_ Condemnation
- \_\_\_ Jury trial waiver (this is not landowner friendly)
- \_\_\_ Attorney's fees (this is not landowner friendly)

4. Assemble your team of experts. You do not have to make an important decision like this on your own. From family members to your attorney and accountant, you want to make as informed of a decision as possible.

LAW PROGRAM <http://farmoffice.osu.edu>

# Program Overview – Solar Leasing 101

- Part 1: Utility Scale Solar Development Trends
  - Why is this happening?
  - Regulatory and siting process
  - Local economic benefits
  - Public health and safety
  - Construction process





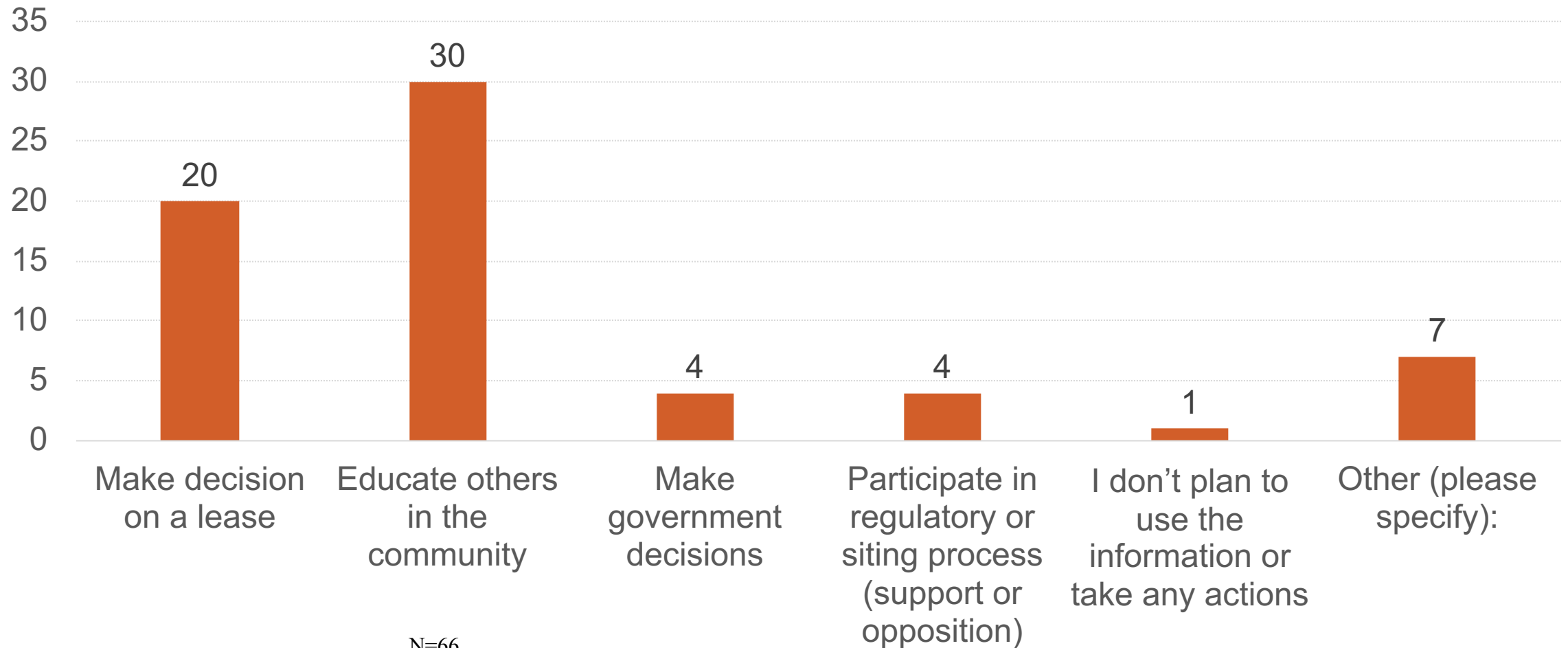
# Program Overview – Solar Leasing 101

- Part 2: Legal Issues
  - Initial considerations
    - Impacts on the farm and land
    - Property taxes
    - Government programs
    - Liability and insurance
    - Neighbor and community relations
  - The life cycle of a solar lease
  - Common legal documents
    - Letter of intent
    - Option to lease
    - Solar lease





How will you use the information from this workshop, or want actions do you plan to take as a result of attending this workshop? (select all that apply)



N=66

Please tell us about the utility scale solar energy topic(s), positive or negative, that are most important to you.

- Local taxes, lease, CAUV impact
- Public health
- Toxic panels
- Land use and water runoff
- Land use and drainage
- Solar impact to local communities
- Decommission
- Mortgage / Lender protections
- Easement language and considerations
- Considerations for landowner protections in cleanup
- Impact and consideration of farmland transfer
- Ohio Power Siting Board and it's duties
- The PILOT program and the payments to counties and townships

# Questions?

## Eric Romich

OSU Extension

Field Specialist, Energy Education

Office: 419-294-4931

Email: [romich.2@osu.edu](mailto:romich.2@osu.edu)

## Peggy Kirk Hall

OSU Extension

Director, OSU Agricultural &

Resource Law Program

Email: [aglaw@osu.edu](mailto:aglaw@osu.edu)

[go.osu.edu/utility-solar](https://go.osu.edu/utility-solar)