WELCOME
to the
14th Annual
Greening the Statehouse

Hoosier Environmental COUNCIL

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GREEN BUSINESS

#HECGreenBiz

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The Sky is the Limit

emPowering Progress

Ambre Blends
BRICS
C.H. Douglas & Gray Wealth Management
Eco Logic
Griffy Creek Studio
MPI Solar
NUVO
Rectify Solar
Renewable Energy Systems
RiverBirch Executive Advisors
Sage Leadership Group
Science and Magic
Singer Wealth Advisory of Raymond James
The Mindrebo Group
The National Bank of Indianapolis

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Thanks to Our GTS Business Partner

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Thanks to Our Gold Nonprofit Partners

MoonTree Studios
Fearlessly Creating

Commission on Sustainability
MICHIGAN CITY
INDIANA

Citizens' Climate Lobby

LWV LEAGUE OF WOMEN VOTERS® OF INDIANA

THE HUMANE SOCIETY OF THE UNITED STATES

carbon neutral INDIANA

greendrinks
saving the world one sip at a time

SIERRA CLUB

SOLARIZE Indiana

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SOLAR UNITED NEIGHBORS

20 years earth charter INDIANA

WHITE RIVER ALLIANCE

ILMS "Dedicated to our Lakes"

CITIZENSACTIONCOALITION
turning on citizen power *for 40 years*

Indiana Passenger Rail Alliance

CARMEL GREEN INITIATIVE
working together for a greener tomorrow

Environmental Resilience Institute
PREPARED FOR ENVIRONMENTAL CHANGE

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Thanks to Our Silver Nonprofit Partners

Indiana Public Health Association
Health by Design
Elders Climate Action
Save the Dunes
SIREN: Solar Indiana Renewable Energy Network
Indiana Wildlife Federation
Indiana Forest Alliance
Christian Theological Seminary

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Find HEC Online & on Social Media

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Hashtags for Social Media

For the event: #GTS2021

For legislation that is mentioned: #INLegis

For the following topics:

Climate-related policy: #ActOnClimate

Coal ash: #CoalAshIN

Environmental justice: #HECProtectsUs

HEC Green Businesses: #HECGreenBiz

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1

2

3

Now a brief guide to Hopin.

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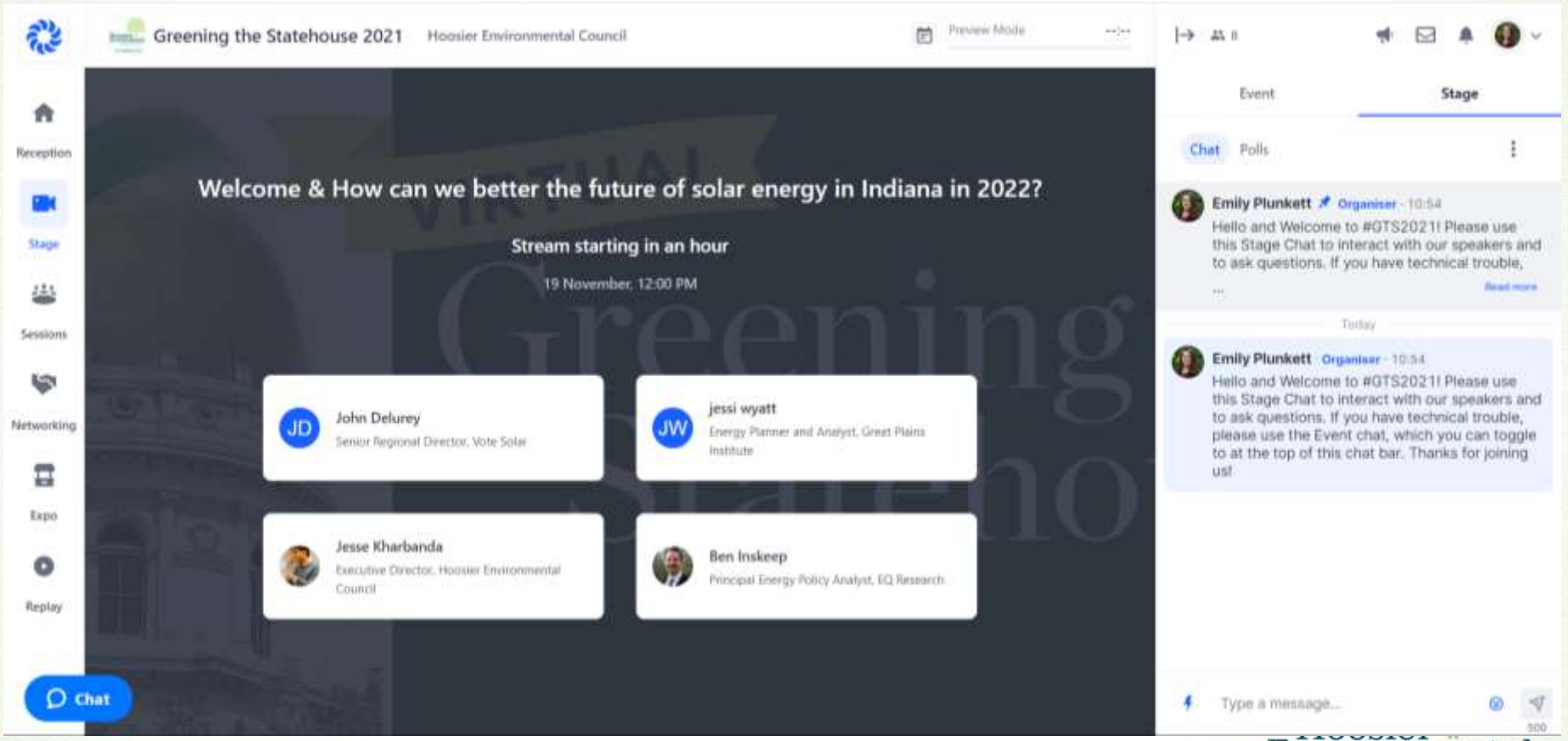

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NEED TECHNICAL HELP?

- Make sure you have viewed our helpful YouTube video from last year at youtube.com/hecweb1
- Still struggling?
  - Post technical questions in the Event or Q&A
  - Direct Message Shannon Curtis Kellogg
  - Email gts@hecweb.org

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Indiana Solar in 2021/2022: A Big Picture Assessment

Jesse Kharbanda

Executive Director

Hoosier Environmental Council

November 19, 2021

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The Energy Landscape is Really Changing in Indiana

Coal (2011): 77.7%

Coal (2020): 47.3%

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Drivers of that Change

- Aging nature of the coal plants
- Environmental advocacy campaigns
- Federal policy
- Changing economics

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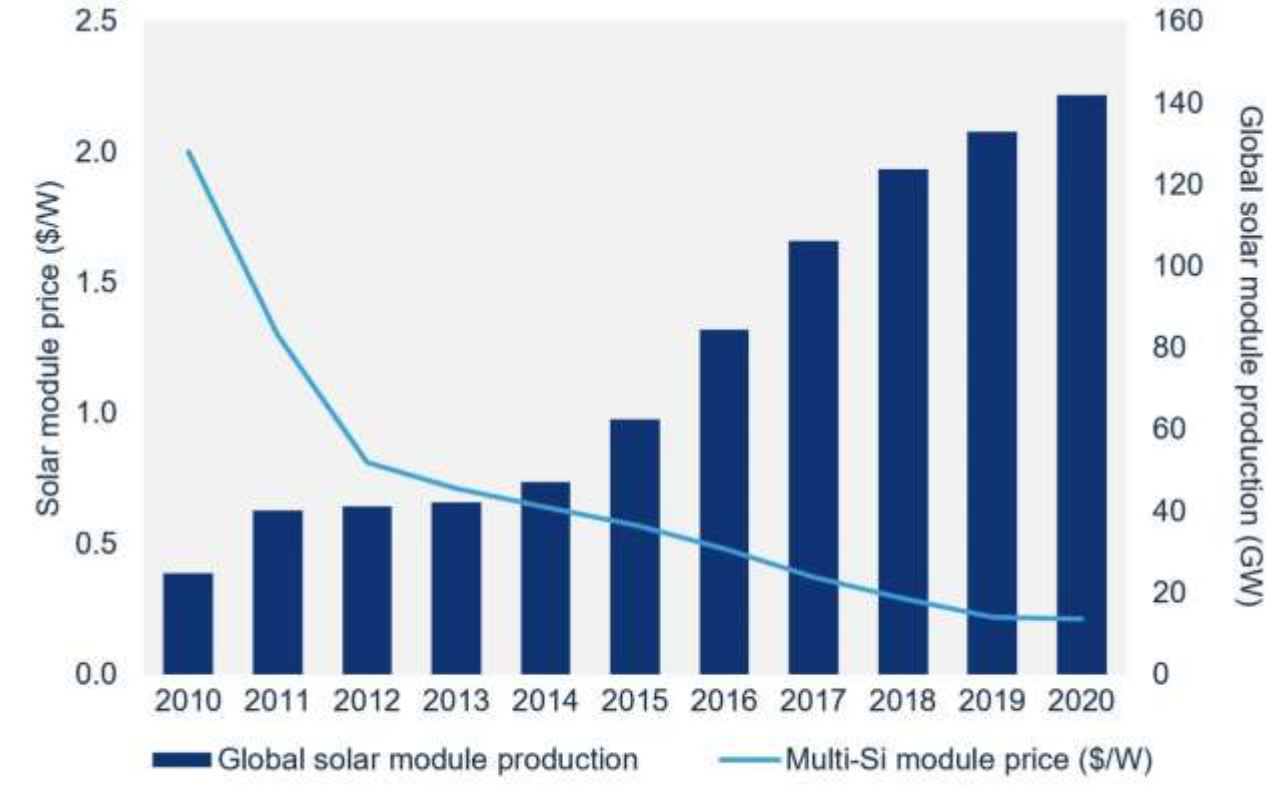

(Source: https://www.greentechmedia.com/articles/read/solar-pv-has-become-cheaper-and-better-in-the-2010s-now-what)

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Levelized Cost of Energy Comparison—Unsubsidized Analysis

Selected renewable energy generation technologies are cost-competitive with conventional generation technologies under certain circumstances

Source: *Lazard estimates.*

Note: Here and throughout this presentation, unless otherwise indicated, the analysis assumes 60% debt at 8% interest rate and 40% equity at 12% cost. Please see page titled "Levelized Cost of Energy Comparison—Sensitivity to Cost of Capital" for cost of capital sensitivities. These results are not intended to represent any particular geography. Please see page titled "Solar PV versus Gas Peaking and Wind versus CCGT—Global Markets" for regional sensitivities to selected technologies.

(1) Unless otherwise indicated herein, the low case represents a single-axis tracking system and the high case represents a fixed-tilt system.

(2) Represents the estimated implied midpoint of the LCOE of offshore wind, assuming a capital cost range of approximately $2,600 – $3,675/kW.

(3) The fuel cost assumption for Lazard's global, unsubsidized analysis for gas-fired generation resources is $3.45/MMBTU.

(4) Unless otherwise indicated, the analysis herein does not reflect decommissioning costs, ongoing maintenance-related capital expenditures or the potential economic impacts of federal loan guarantees or other subsidies.

(5) Represents the midpoint of the marginal cost of operating fully depreciated gas combined cycle, coal and nuclear facilities, inclusive of decommissioning costs for nuclear facilities. Analysis assumes that the salvage value for a decommissioned gas combined cycle or coal asset is equivalent to its decommissioning and site restoration costs. Inputs are derived from a benchmark of operating gas combined cycle, coal and nuclear assets across the U.S. Capacity factors, fuel, variable and fixed operating expenses are based on upper- and lower-quartile estimates derived from Lazard's research. Please see page titled "Levelized Cost of Energy Comparison—Renewable Energy versus Marginal Cost of Selected Existing Conventional Generation" for additional details.

(6) High end incorporates 90% carbon capture and storage. Does not include cost of transportation and storage.

(7) Represents the LCOE of the observed high case gas combined cycle inputs using a 20% blend of "Blue" hydrogen, (i.e., hydrogen produced from a steam-methane reformer, using natural gas as a feedstock, and sequestering the resulting CO_2 in a nearby saline aquifer). No plant modifications are assumed beyond a 2% adjustment to the plant's heat rate. The corresponding fuel cost is $5.20/MMBTU.

(8) Represents the LCOE of the observed high case gas combined cycle inputs using a 20% blend of "Green" hydrogen, (i.e., hydrogen produced from an electrolyzer powered by a mix of wind and solar generation and stored in a nearby salt cavern). No plant modifications are assumed beyond a 2% adjustment to the plant's heat rate. The corresponding fuel cost is $10.05/MMBTU.

CULTURE

The $1.5 Billion Mammoth Solar Farm Will Be the Largest in the US

Spanning two entire counties.

By Chris Young
Nov 16, 2021 (Updated: Nov 17, 2021 08:54 EST)

Solar Farms in Indiana

- 8,500 MW by end of decade
- 33 projects underway
- 22 counties
- 229 MW in size (average)
- 2,400 acres (average)

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Rooftop solar is not growing at nearly the clip as utility-scale solar, but we see inspiring projects…

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Headwinds for Solar in 2022 in Indiana

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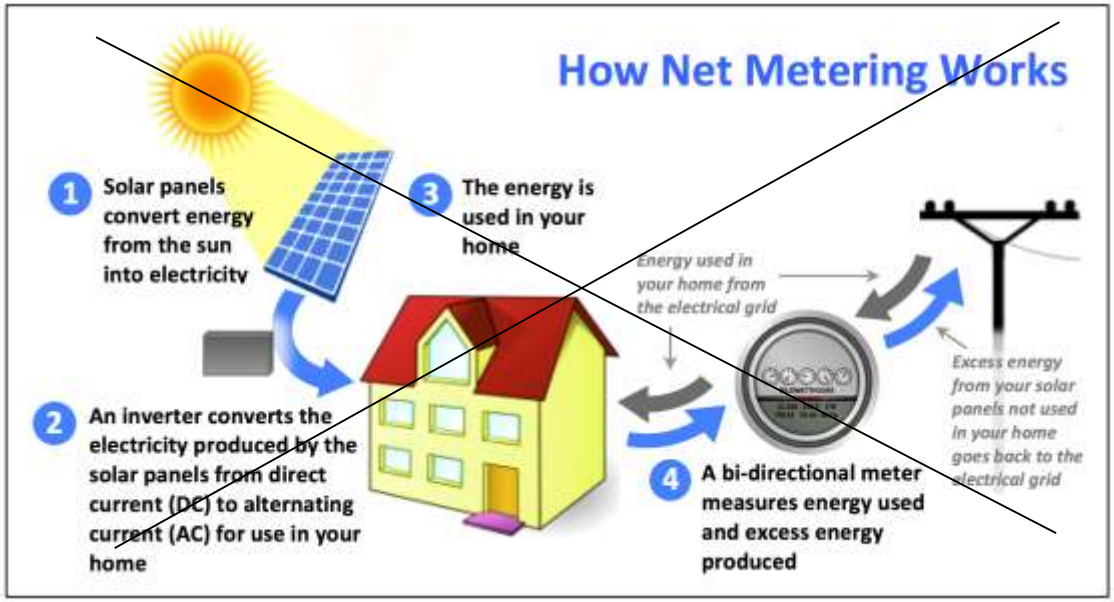
Q: Will rooftop solar policy be undermined (or strengthened)?



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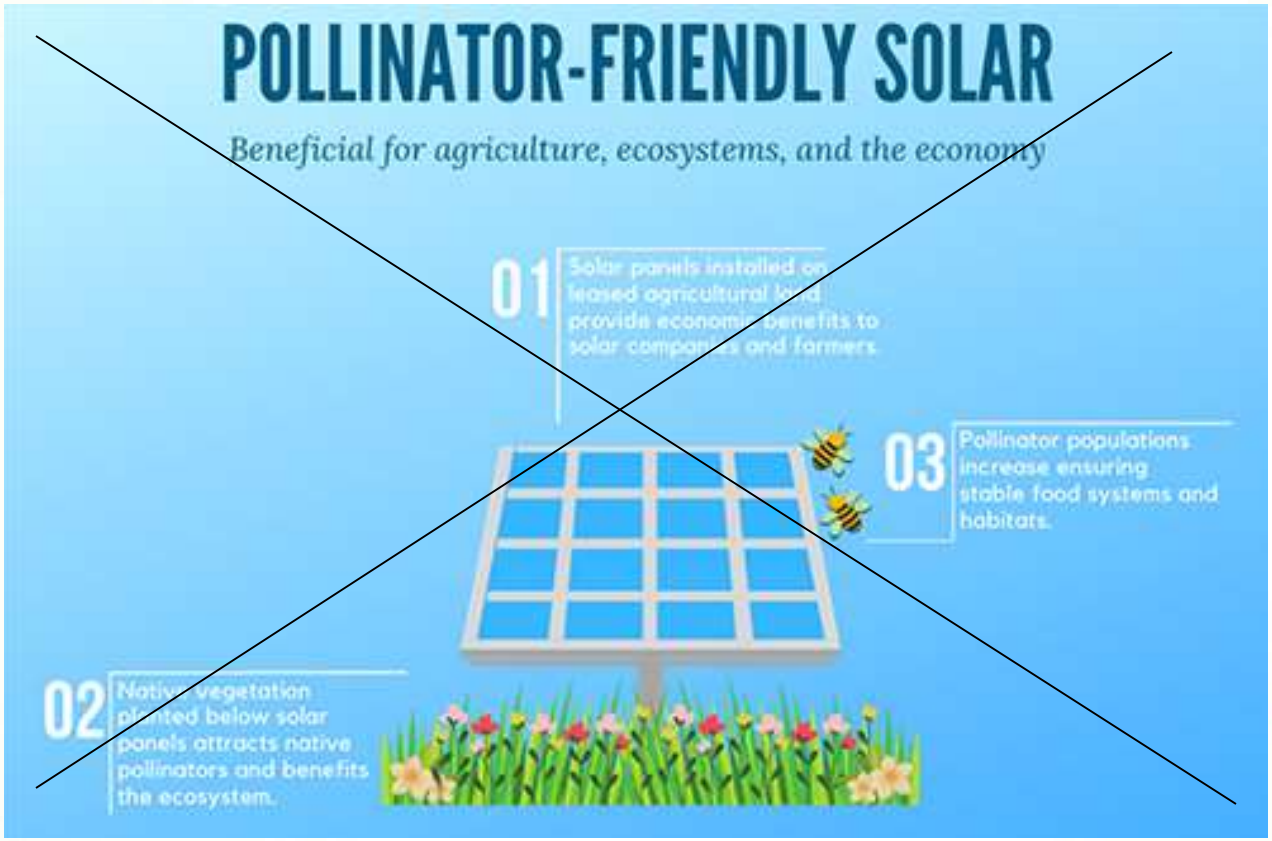
Q: Will environmentally-friendly solar farm policy be undermined (or preserved)?



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A Point of Personal Privilege

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Thank you to several partners

Carmel Green Initiative

Citizens Action Coalition

Earth Charter Indiana

Energy Matters Community Coalition

Evangelical Environmental Network

Hoosier Interfaith Power & Light

Hoosiers for Renewables

Indiana Conservation Alliance for Energy

Indiana Beyond Coal

Indiana DG

NAACP - Indiana

Sierra Club Hoosier Chapter

Solar United Neighbors of Indiana

Solarize Indiana

Solar Indiana Renewable Energy Network

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Recognize Some Long-Time, Resilient Colleagues

Our Panelists

- Ben Inskeep of EQ Research
- John Delurey of Vote Solar
- Jessi Wyatt of the Great Plains Institute

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We hope you are moved to act to contact your lawmakers (bitly.com/INLegis)

- Empowered with knowledge about the rooftop solar policy climate in Indiana
- Motivated to know that big tent, pro-rooftop solar coalitions can succeed
- Informed about why environmental-sensitive solar design matters

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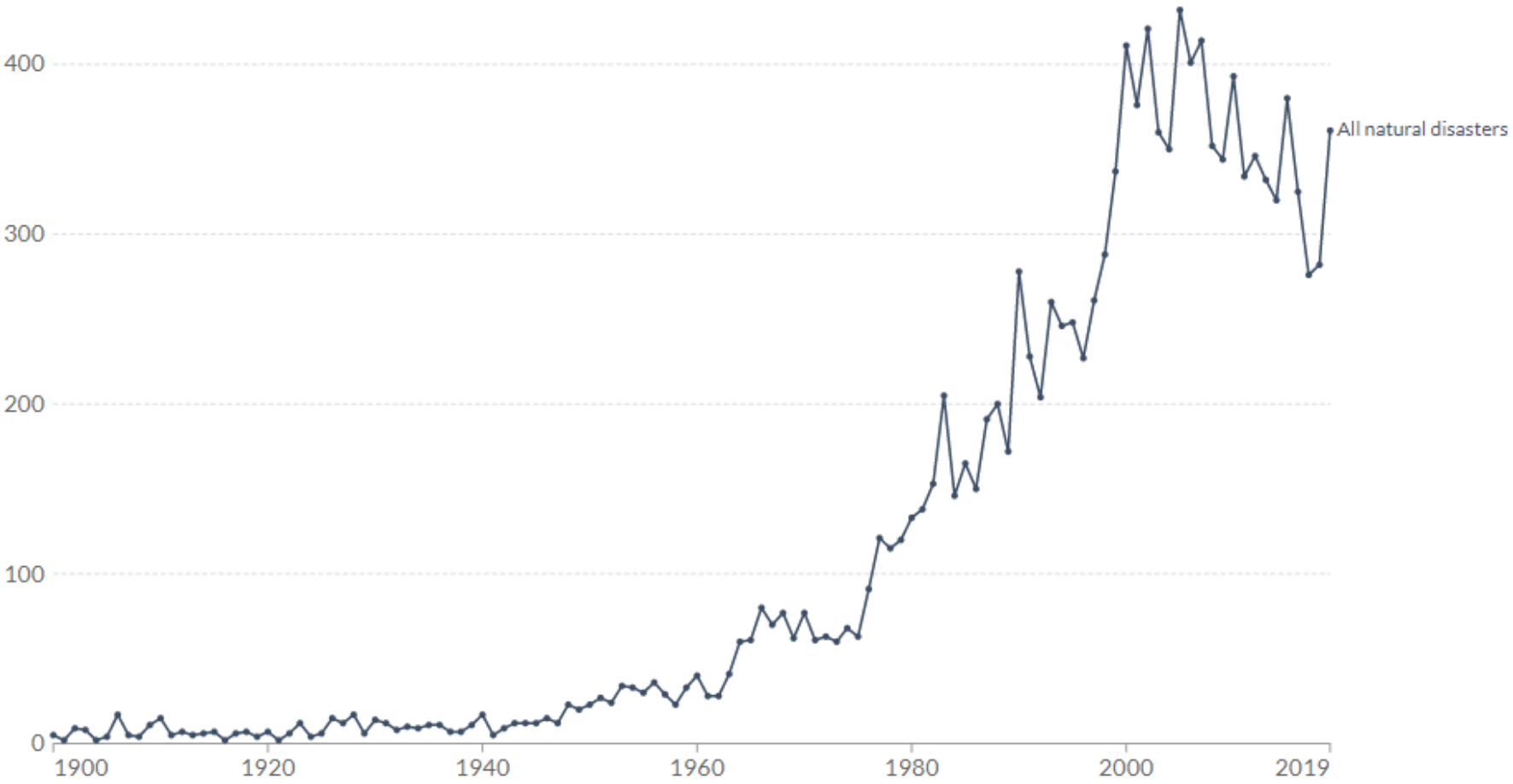
Number of recorded natural disaster events, All natural disasters, 1900 to 2019

Our World in Data

The number of global reported natural disaster events in any given year. This includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes.

⇄ Change disaster category

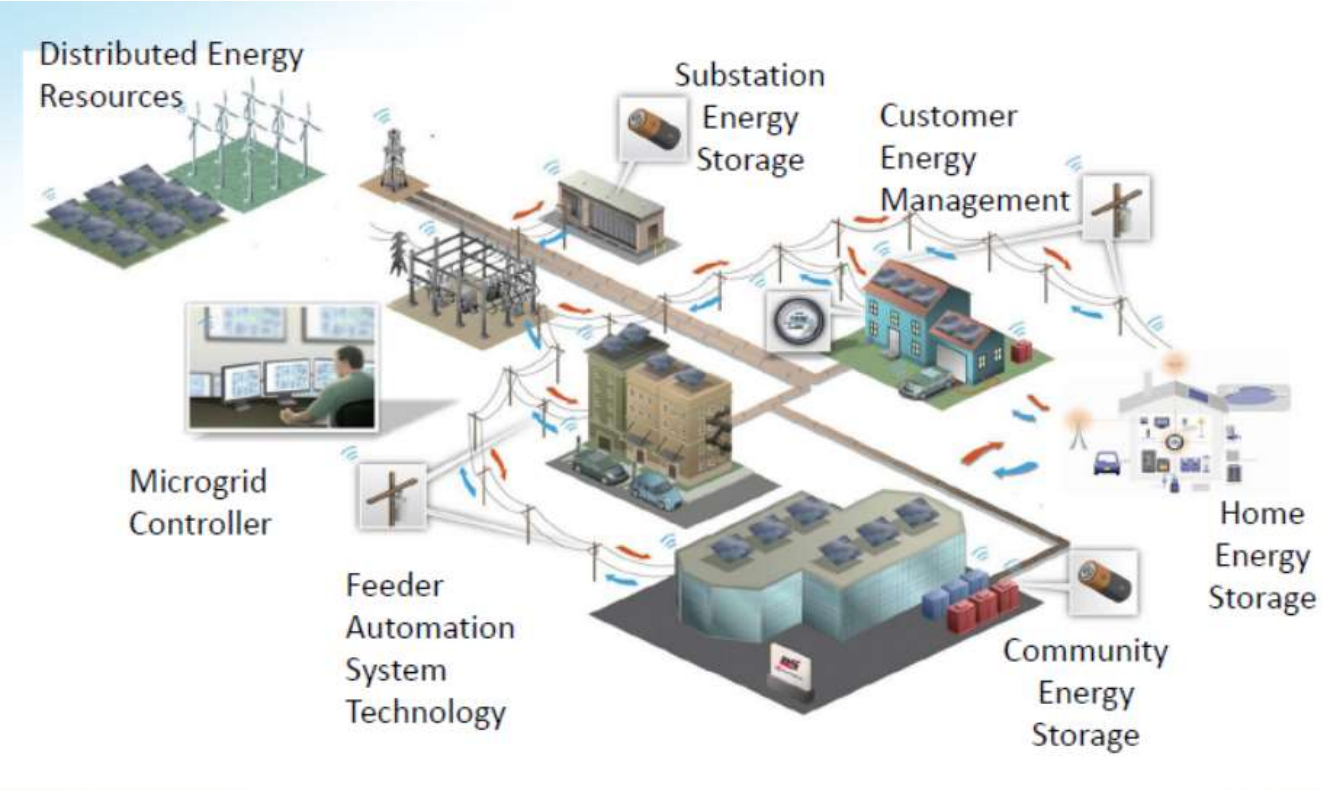


Source: EMDAT (2020): OFDA/CRED International Disaster Database, Université catholique de Louvain – Brussels – Belgium

OurWorldInData.org/natural-disasters • CC BY

▶ 1900 2019

Decentralization reduces risk and increases resilience…



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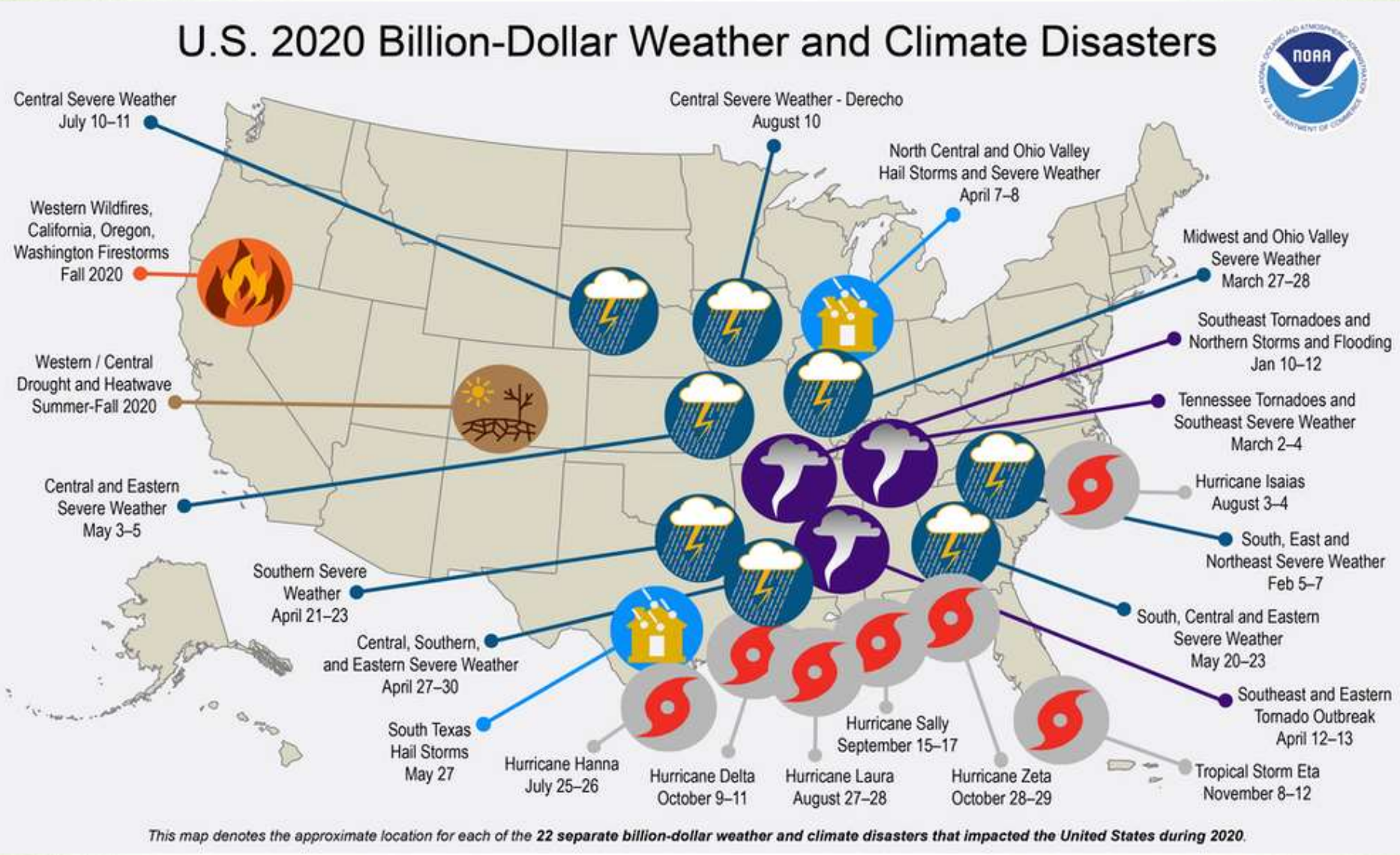
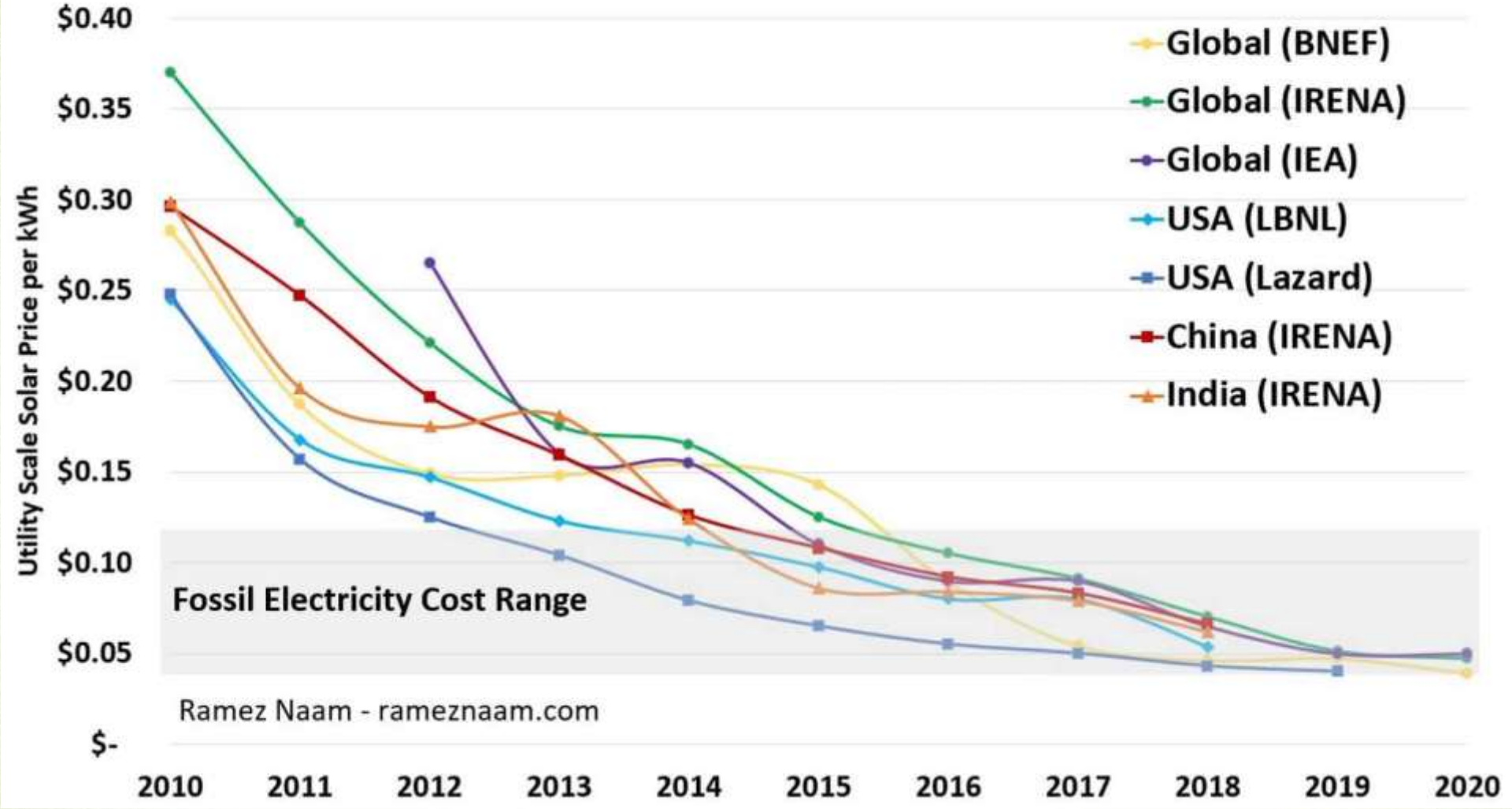
U.S. 2020 Billion-Dollar Weather and Climate Disasters



*This map denotes the approximate location for each of the **22 separate billion-dollar weather and climate disasters that impacted the United States during 2020**.*

Super Storm Sandy Black Out in Lower Manhattan
NYUs Micro Grid around Washington Square Park Area

Solar Costs Dropped by a Factor of 5 Since 2010

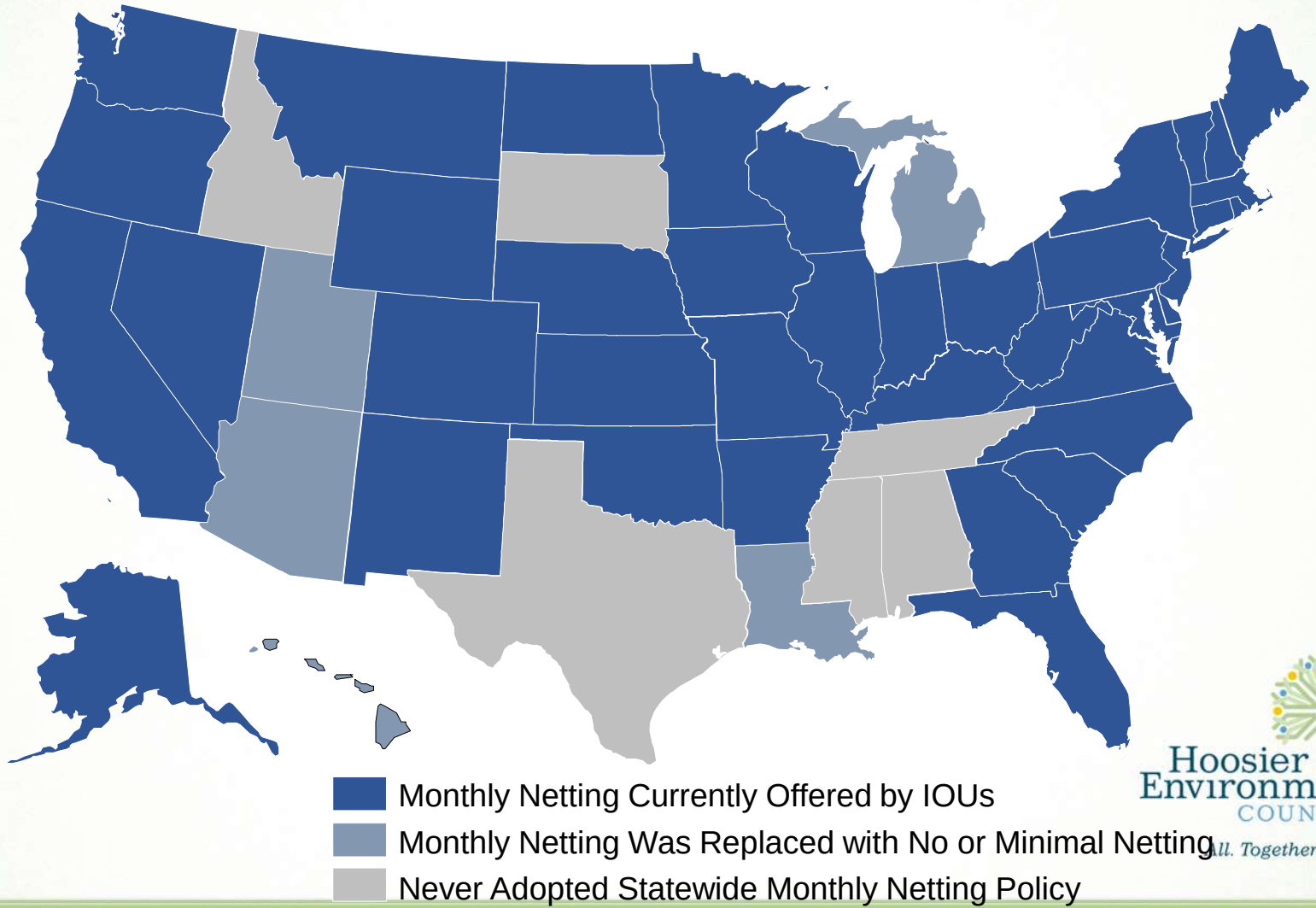


All Located in Underinvested Areas

RENEWABLE ENERGY SYSTEMS, LLC
AVILLA, IN - (260)897-2450

JEFFERSON ELECTRIC

States with Monthly Netting (for Resid., Small. Comm.)



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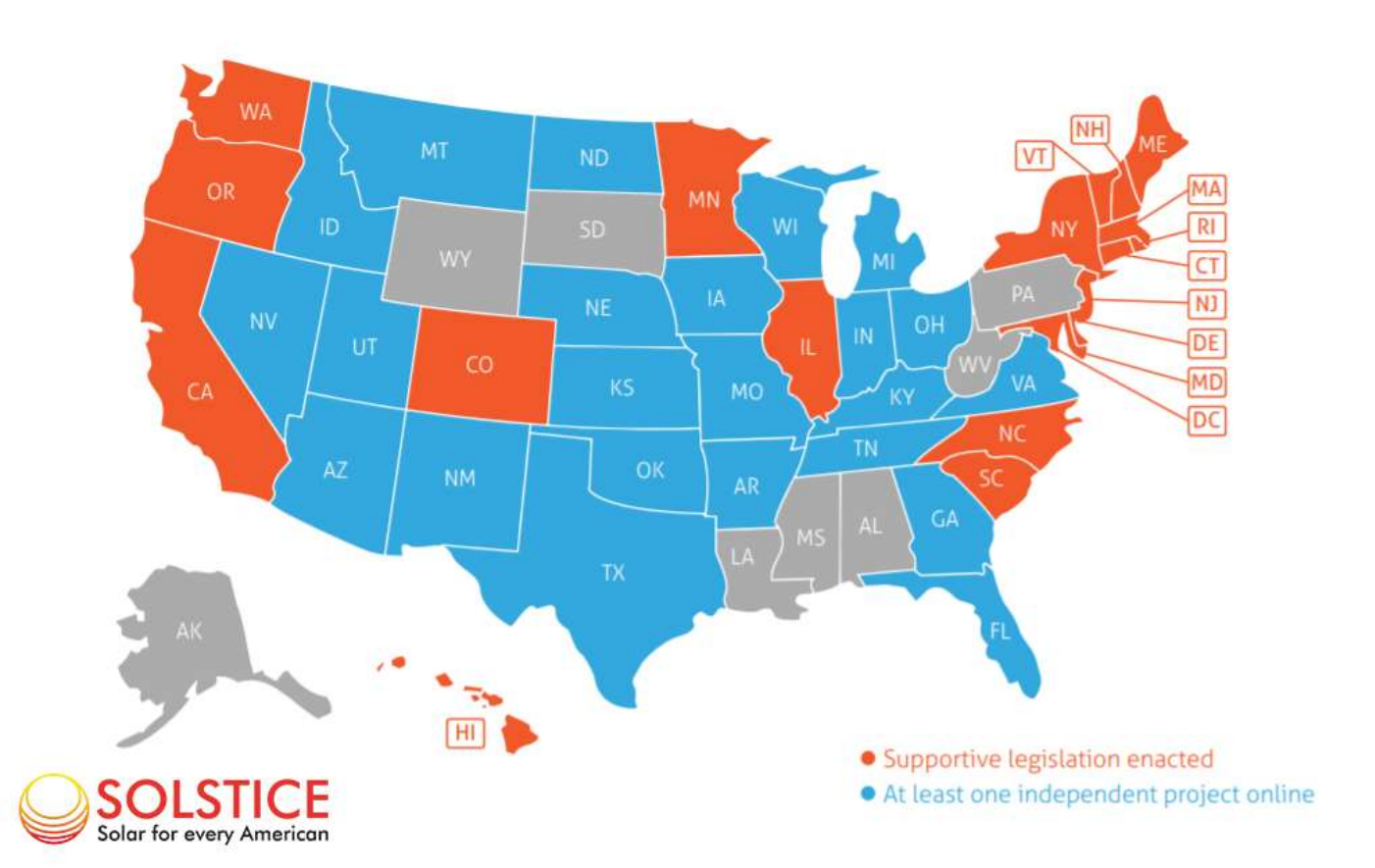
Source: Based on EQ Research of current state policies in effect for most investor-owned utilities in a state as of September 7, 2021.

hecweb

States with Community Solar



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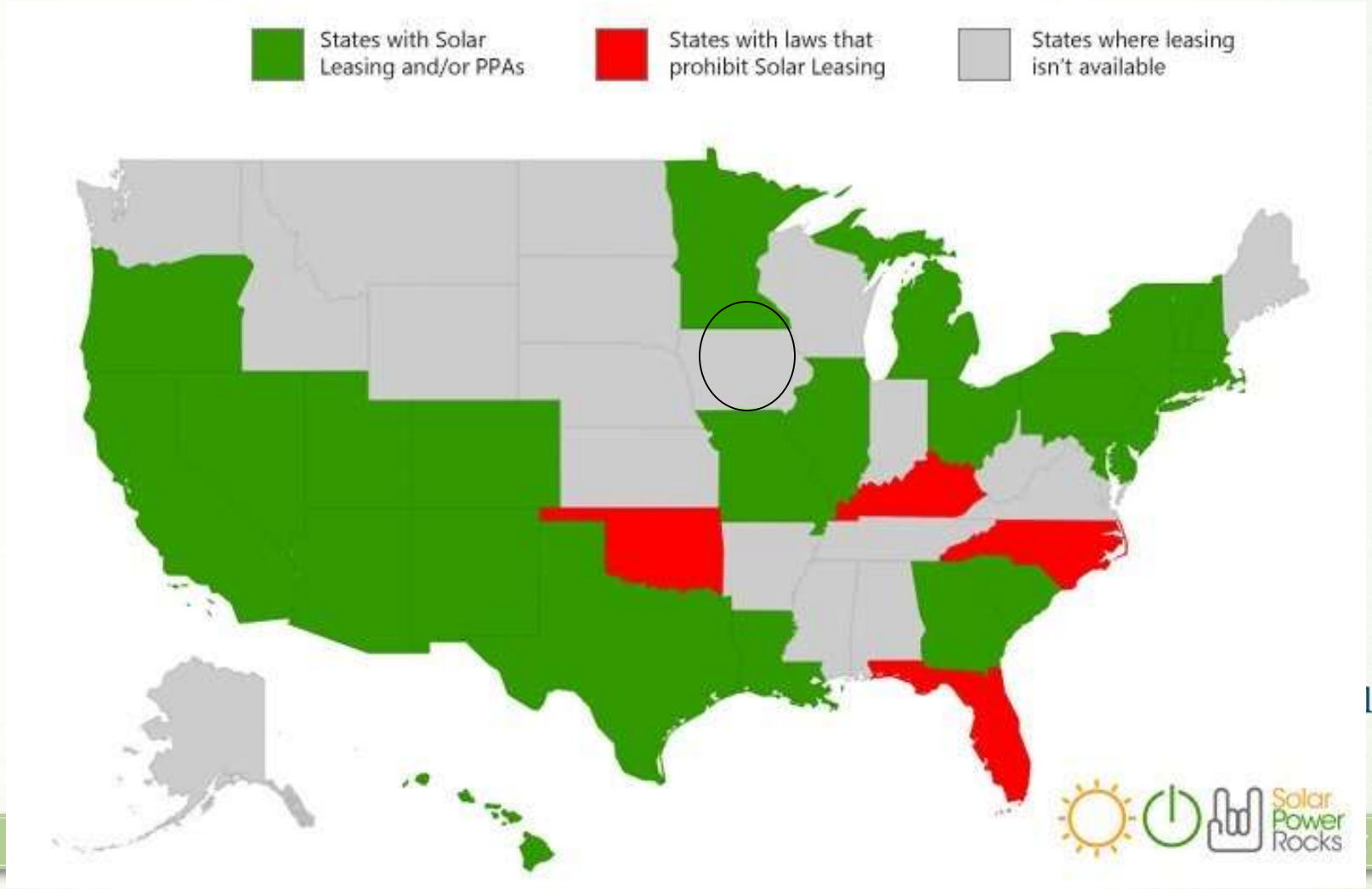
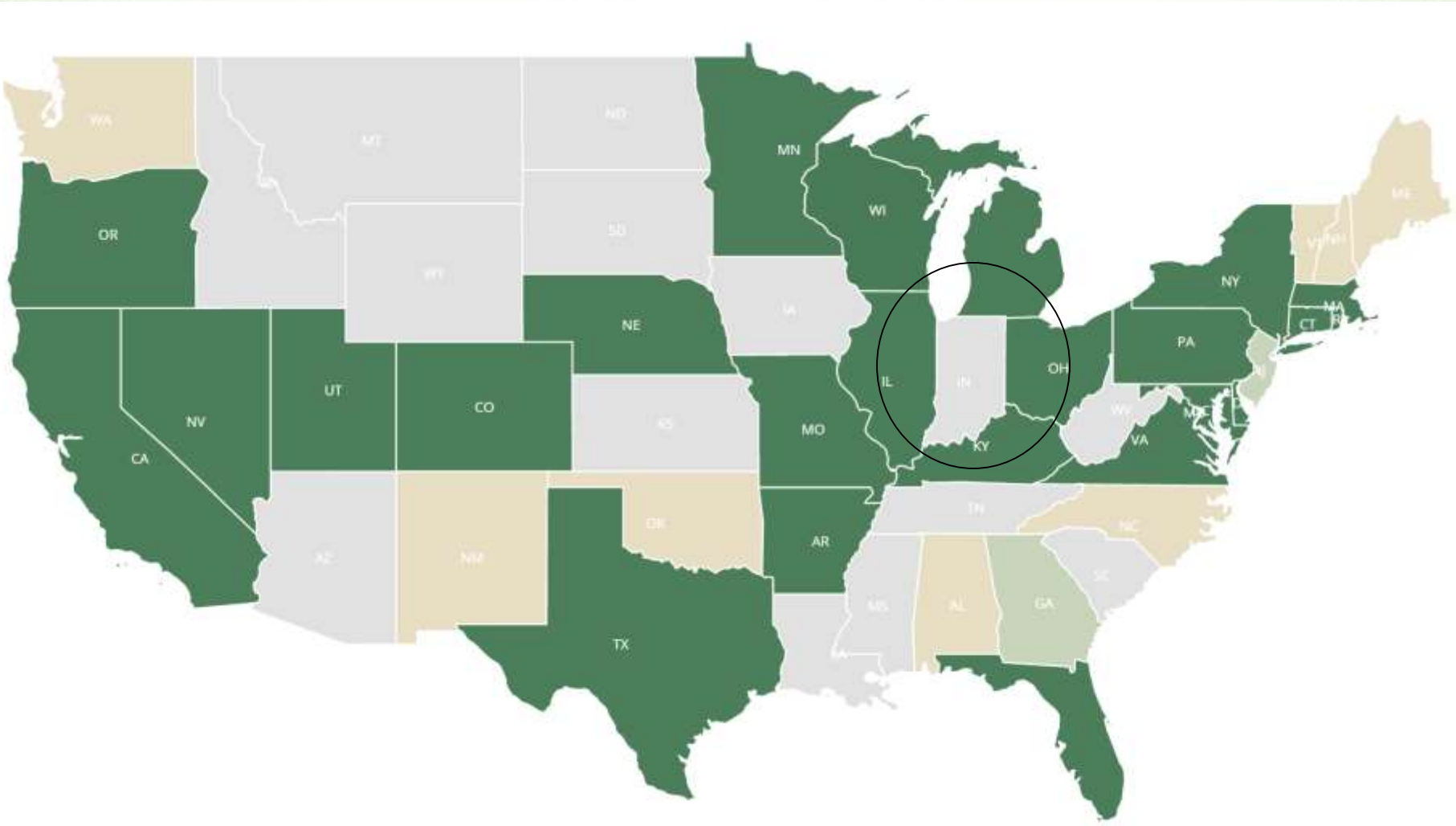
States with Third Party Financing



States with PACE Financing



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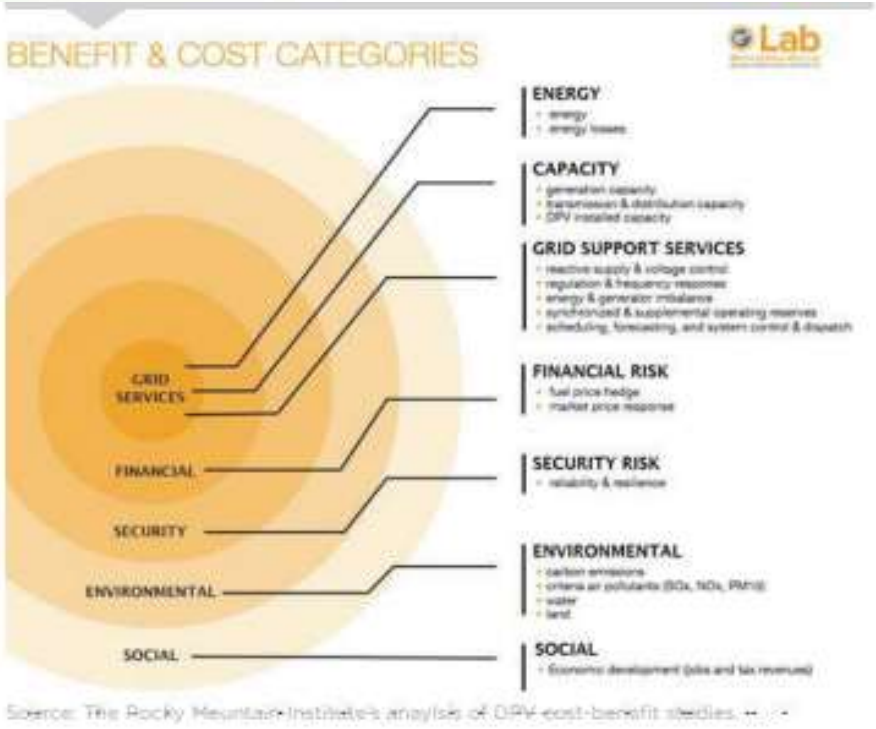
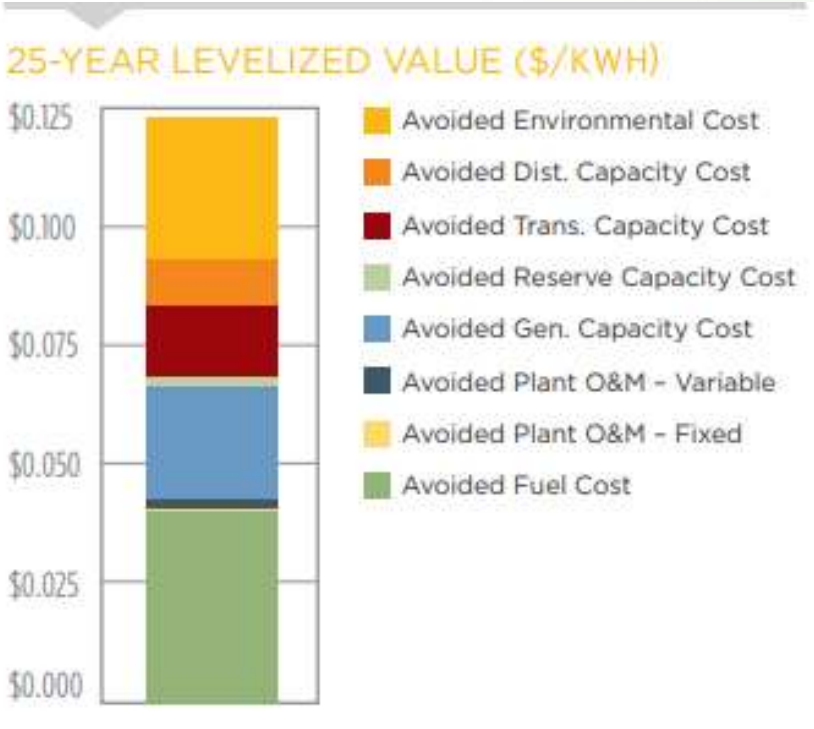
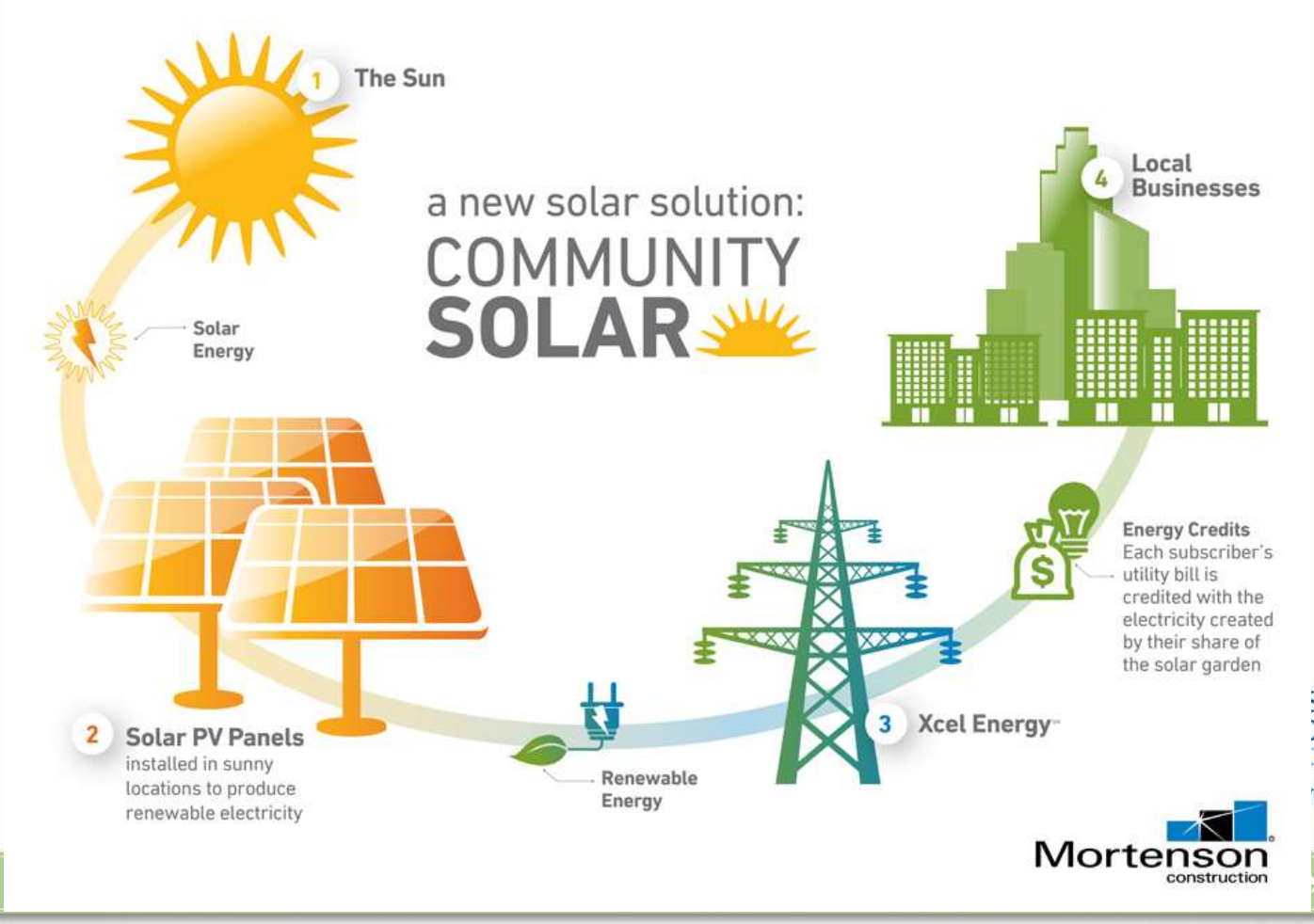
Recommendation: Phase I

Extend the life of net metering in the absence of a VOS study





Opportunity 1: Authorize Third Party Community Solar



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ecweb.org

Community Solar (from MN)

Westminster
Presbyterian Church

- Contract with ReneSola Power
- ReneSolar Power, in turn, leases land from a monoculture farmer
- Save $1 M over life of contract

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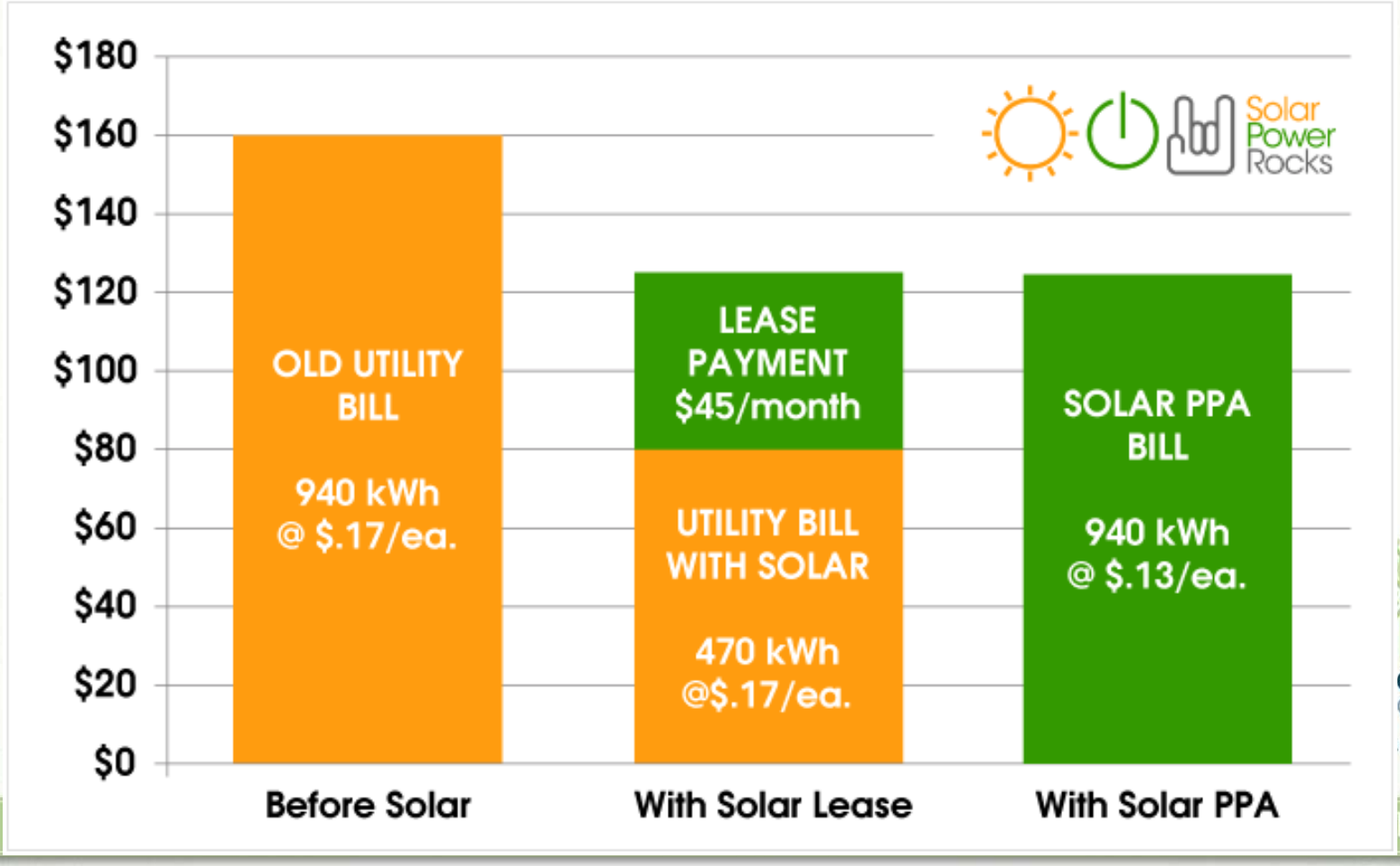
Opportunity 2:
Authorize Third-Party Financing



Third Party Solar (from OH)

- Cincinnati
- PPA with Solar Power & Light
- 20 year contract
- 5 locations
- Buy or continue PPA

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Opportunity 3: Legalize Commercial PACE Financing

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PACE Financing (from MI)

- Powers Distributing
- Orion Township district
- 95 KW solar plus LED lighting
- $350,000 in savings over 20 years

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Some Facts about Community Solar Across the U.S.

- Key Beneficiaries
  - Commercial tenants
  - Multi-family housing
  - Homeowners for whom solar not in reach
- Energy produced equivalent to that of:
  - 390,000 homes (2019)
  - 685,000 homes (over next five years)

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Some Facts about Third-Party Solar Across the U.S.

- Key Beneficiaries
  - Municipalities
  - Small businesses
  - Homes
- In NJ, 83% of solar residential projects
- In CO, 95% non-residential

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Some Facts about PACE Financing Across the U.S.

- Key Beneficiaries
  - Large commercial properties
  - Small businesses
- 63,000 jobs
- $6.7 billion
- 240,000 projects

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