

THE MIDWEST SOLAR MARKET

HOT OR NOT?

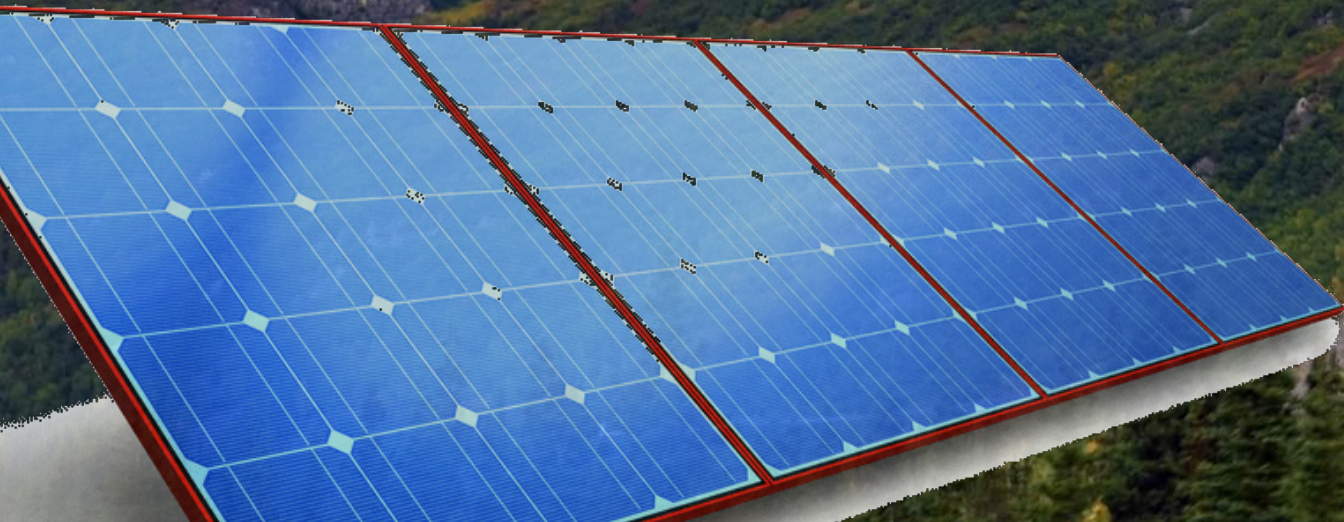


May 16, 2014

John Farrell
Director of Democratic Energy

Big picture:

For years, solar was about remote power installations
and the environment

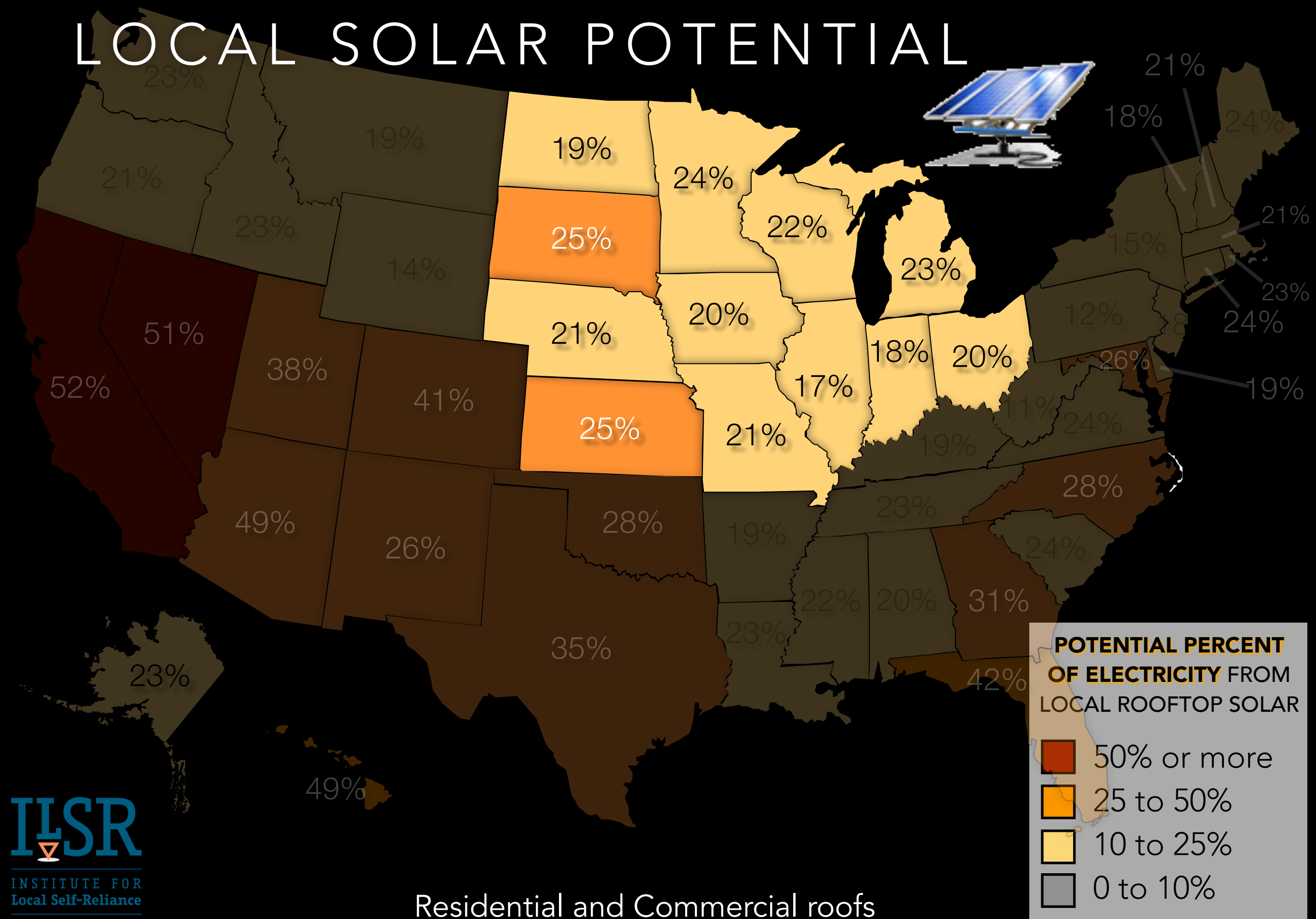


Credit: Flickr user blmiers2

Now solar is about the economics



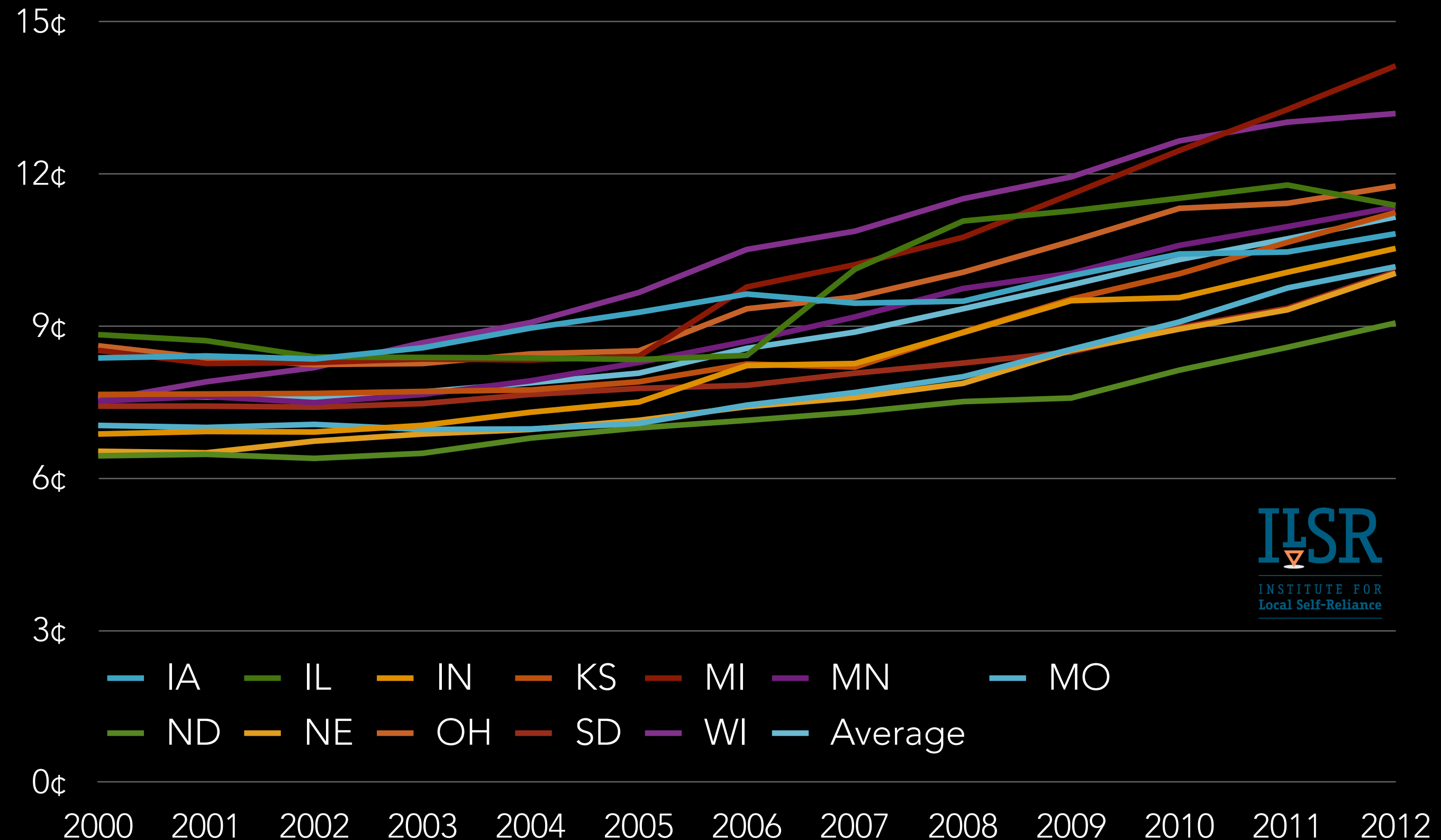
LOCAL SOLAR POTENTIAL



SAVING WITH SOLAR

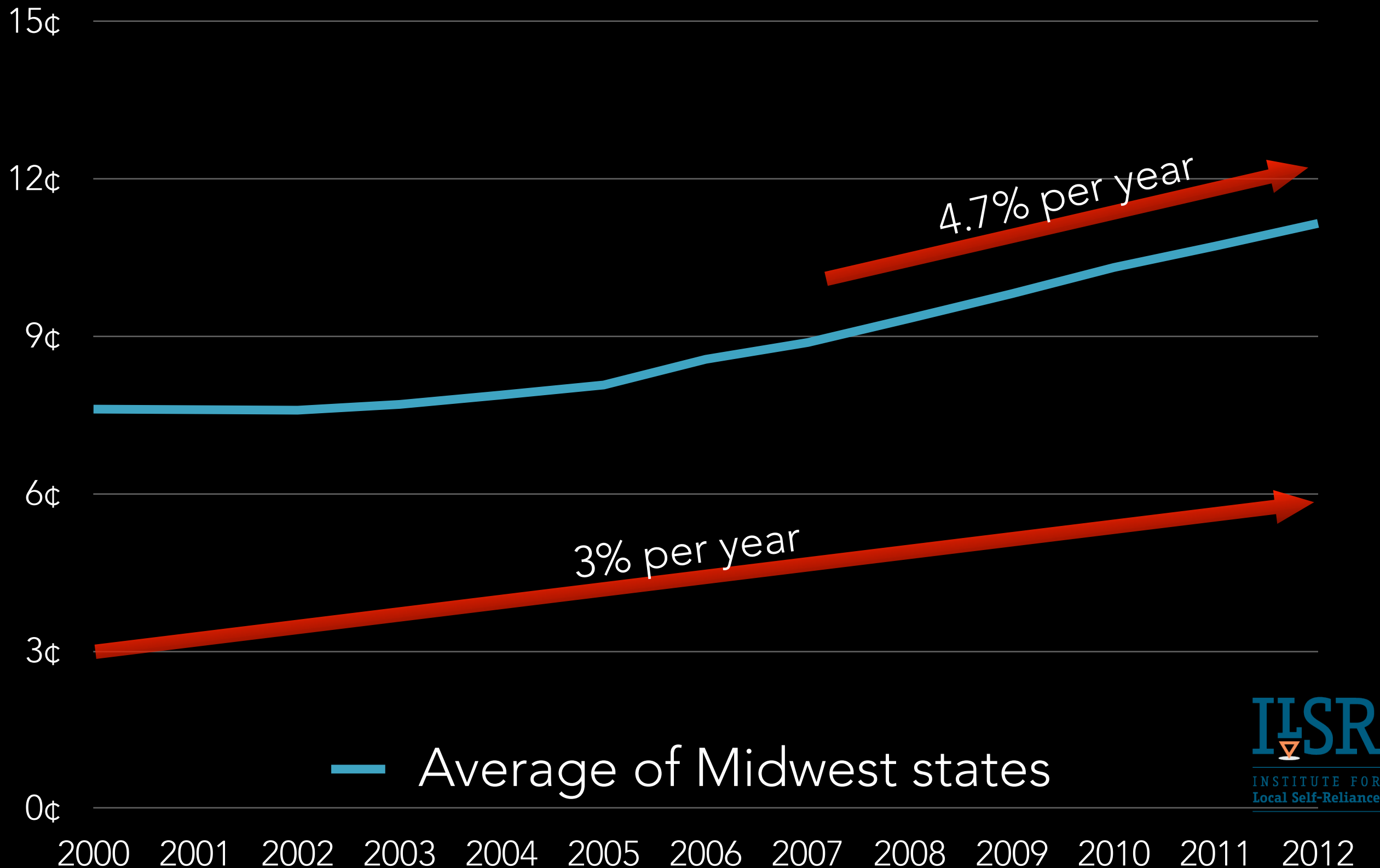
RISING RETAIL ELECTRICITY PRICES

(Residential, ¢ per kilowatt-hour)

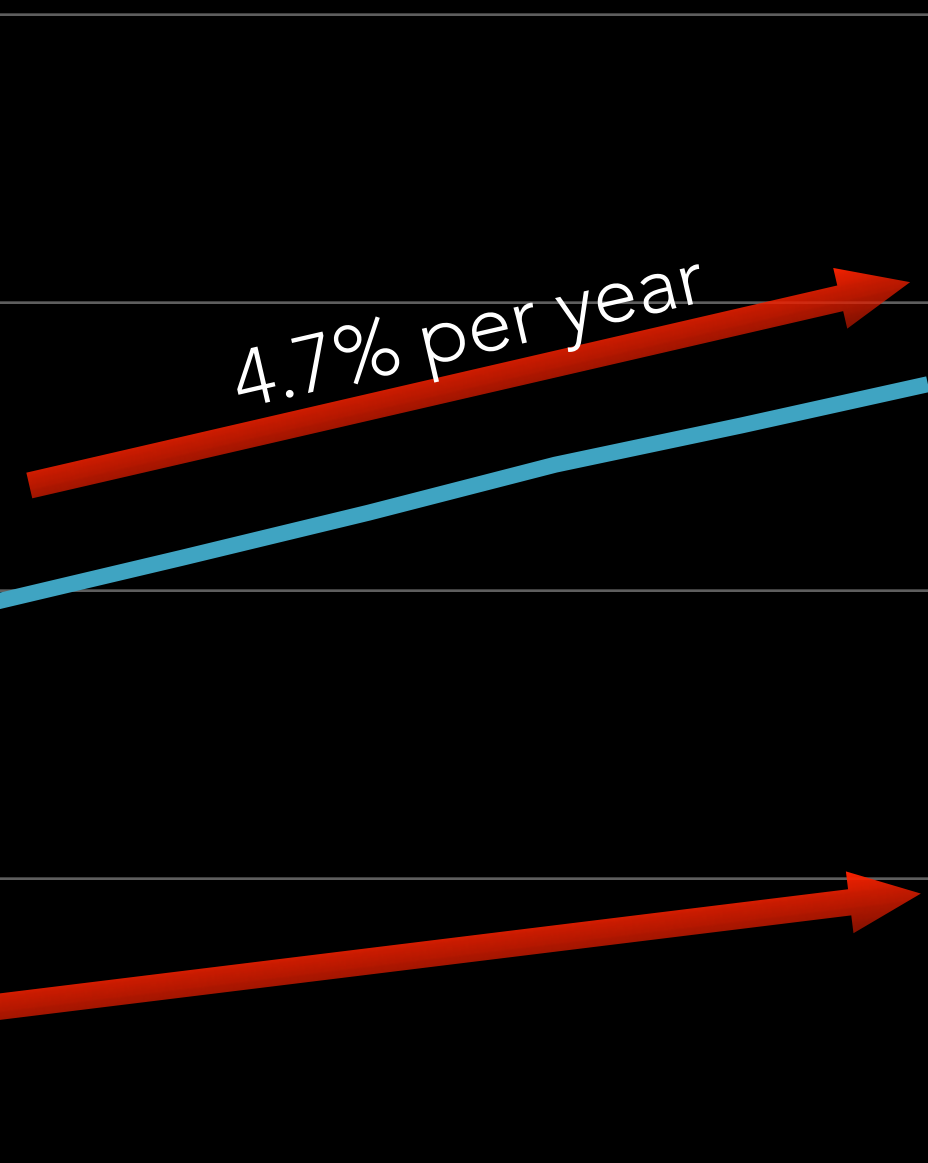


RISING RETAIL ELECTRICITY PRICES

(Residential, ¢ per kilowatt-hour)



RICITY PRICES



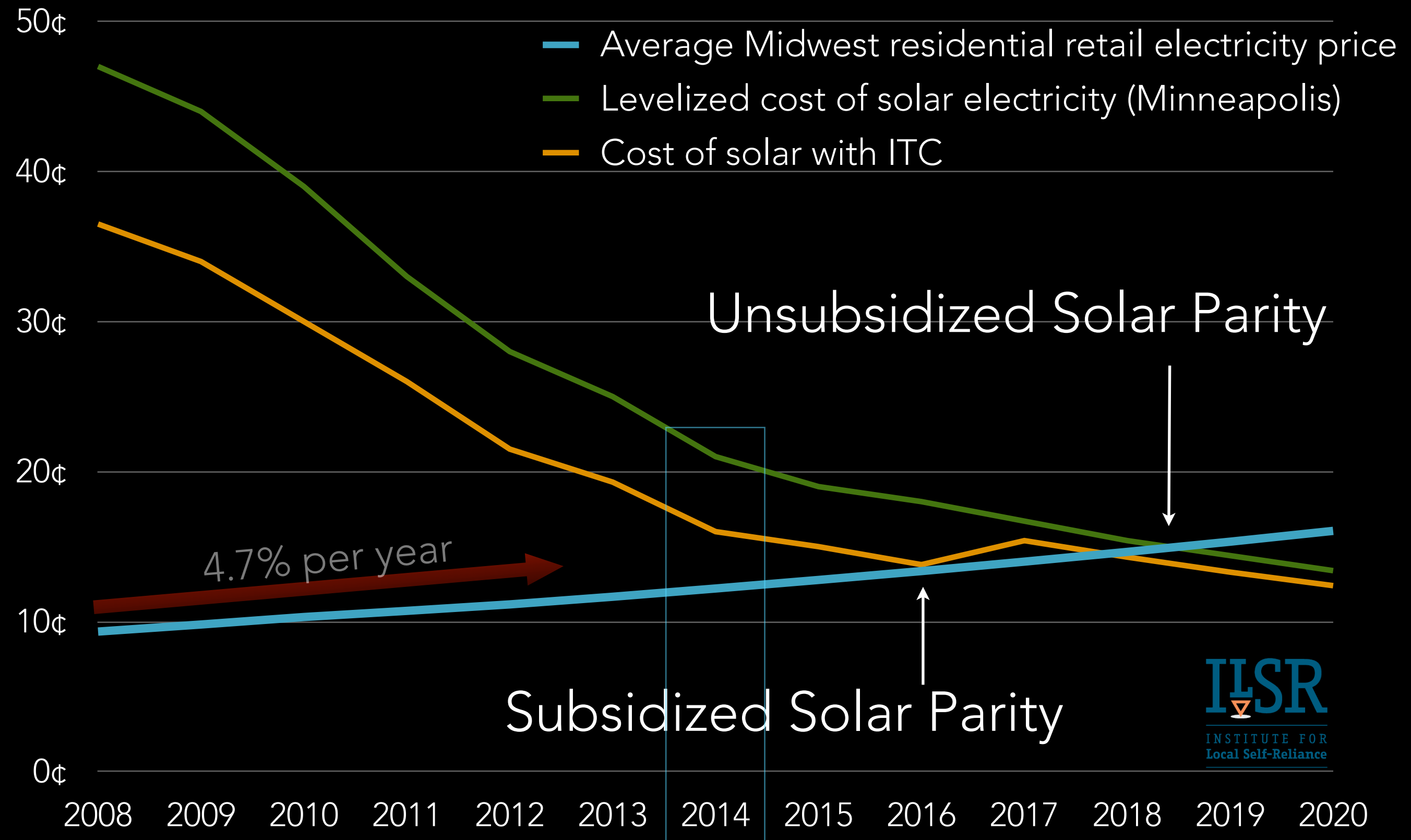
st states

RICITY PRICES

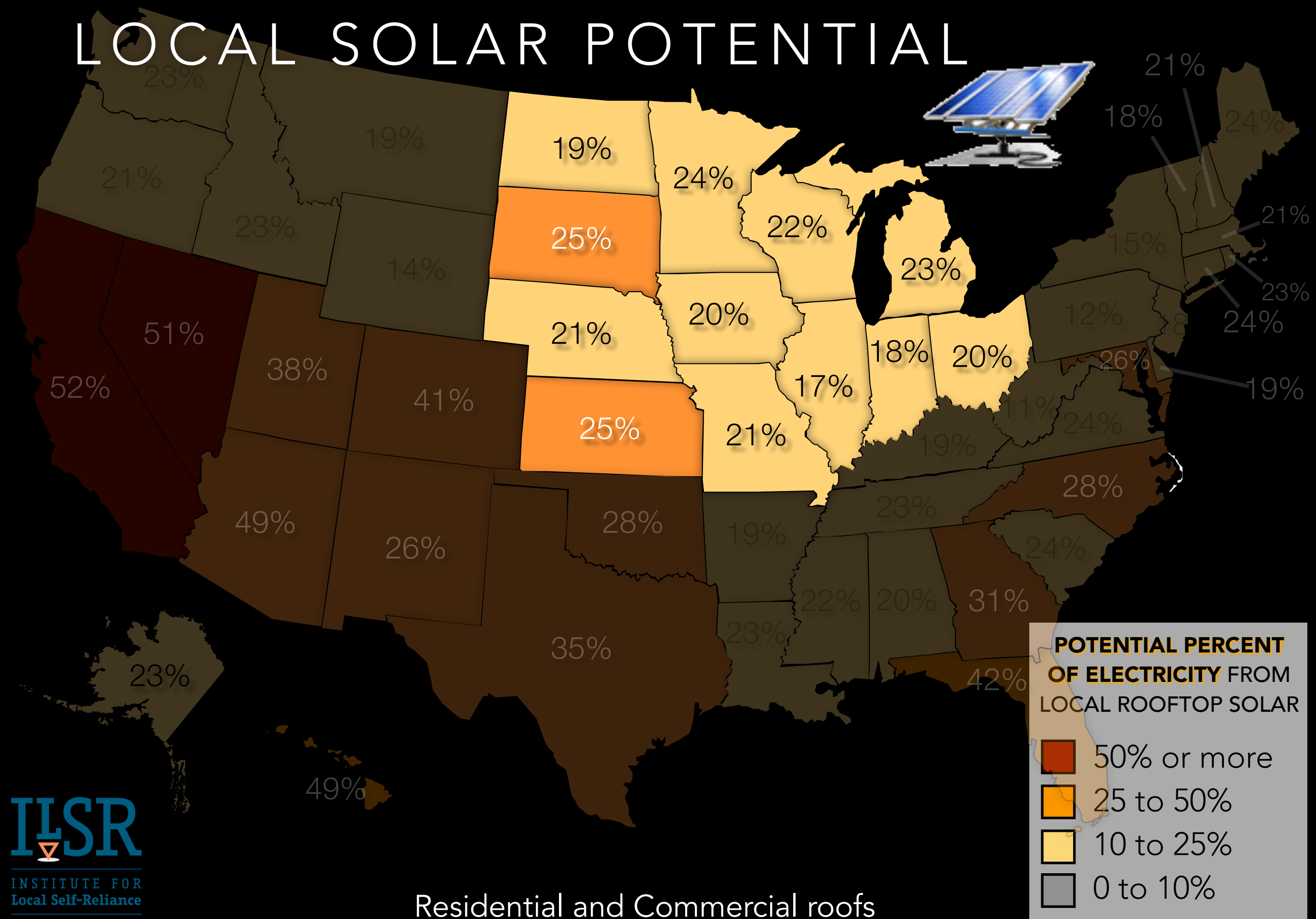


SOLAR PARITY IS COMING

(¢ per kilowatt-hour)

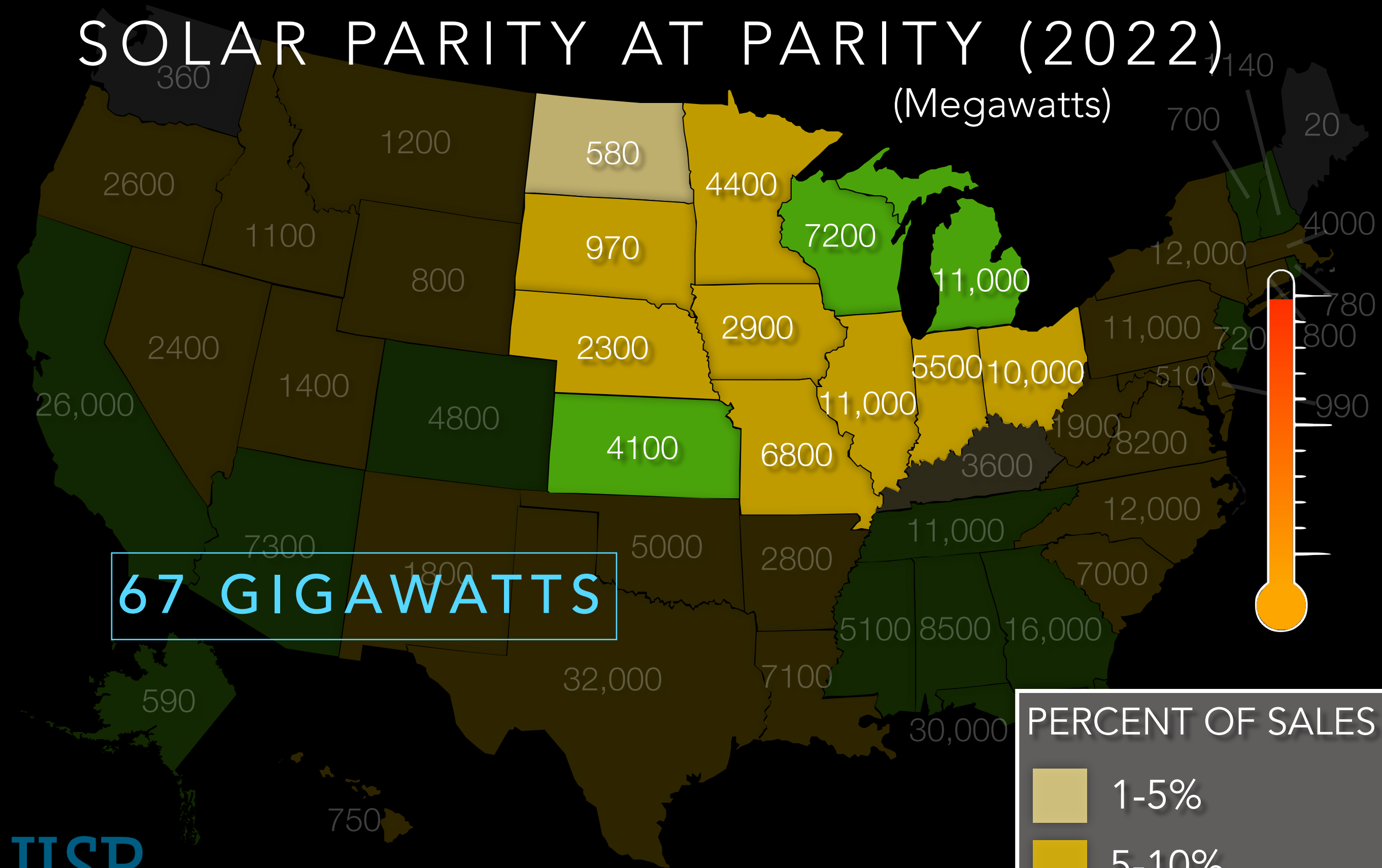


LOCAL SOLAR POTENTIAL



SOLAR PARITY AT PARITY (2022)

(Megawatts)



Residential and Commercial roofs

See ILSR's Rooftop Revolution reports for data

VALUE

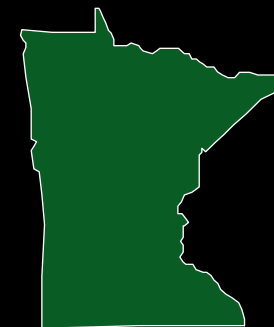
14.7¢

LOCAL POWER VALUE (per kilowatt-hour)

- Local capacity value
- Avoided transmission access
- Environmental
- Avoided transmission losses
- Brown energy replacement

Solar is valuable!

IISR
INSTITUTE FOR
Local Self-Reliance



Minneapolis's Value of Solar
Can a Northern State's New Solar Policy
Defuse Distributed Generation Battles?

John Farrell
April 2014

IISR INSTITUTE FOR
Local Self-Reliance

LOCAL POWER VALUE

(economy)

By the end of 2014, the solar industry will have created over 3,700 jobs and added \$415 million to the state's economy



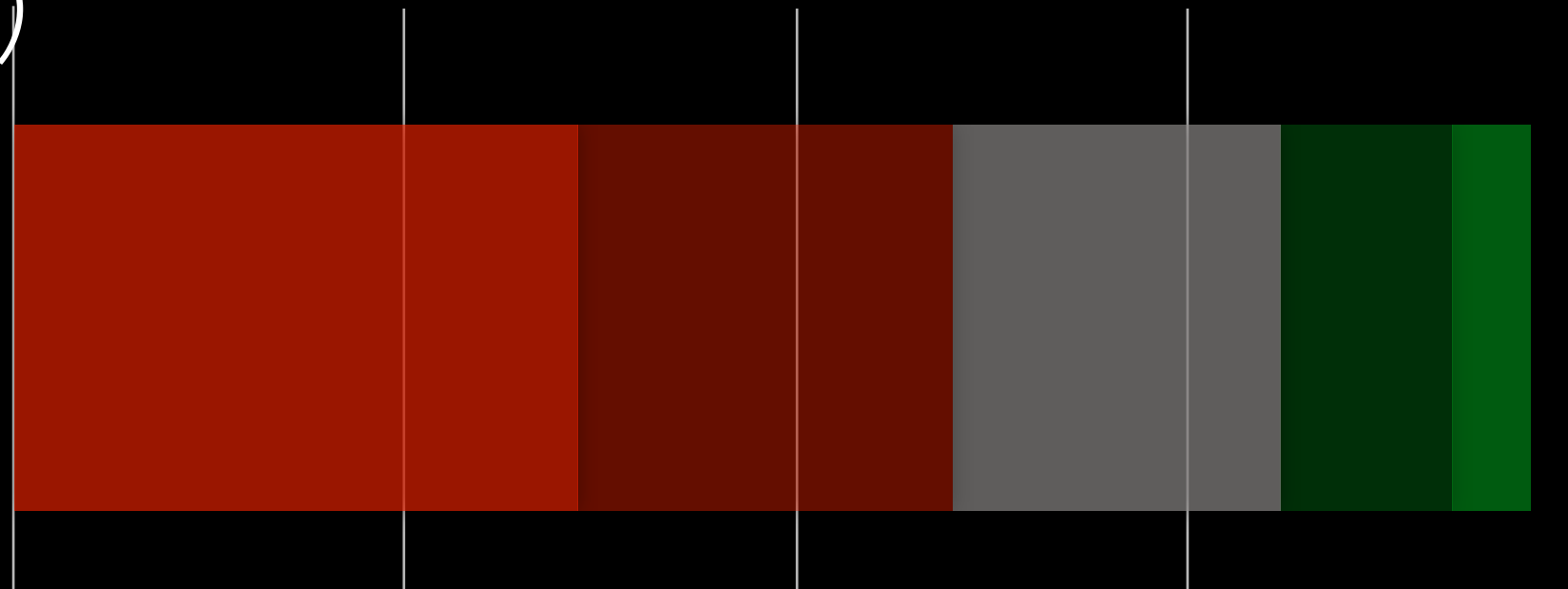
Solar Jobs for Missouri

The state's net metering law allows up to 940 MW of solar, an amount which would generate a further 18,000 jobs and over \$2 billion in economic activity in the state's economy.

LOCAL POWER VALUE

(political)

Not local



very negative

negative

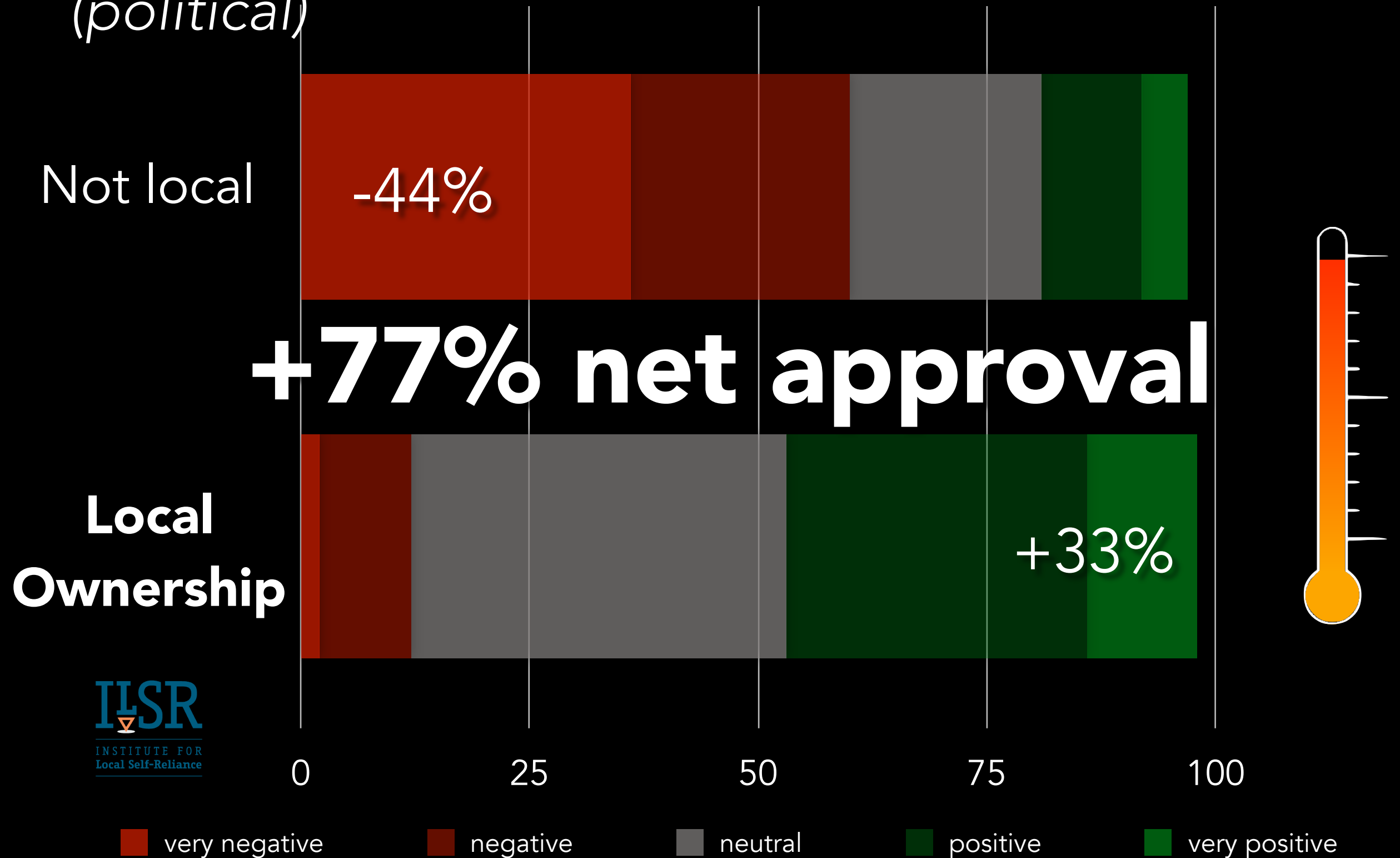
neutral

positive

very positive

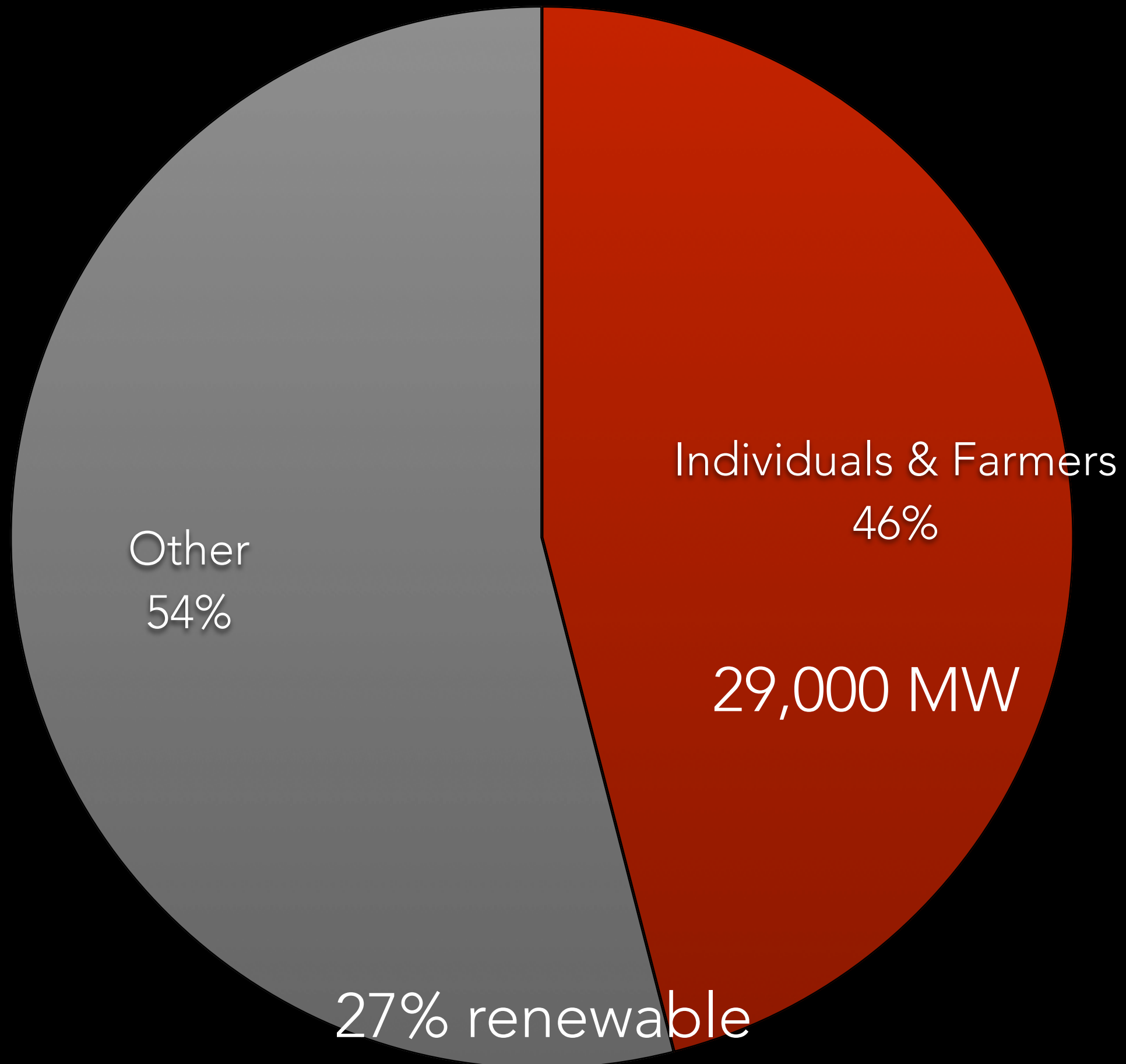
LOCAL POWER VALUE

(political)



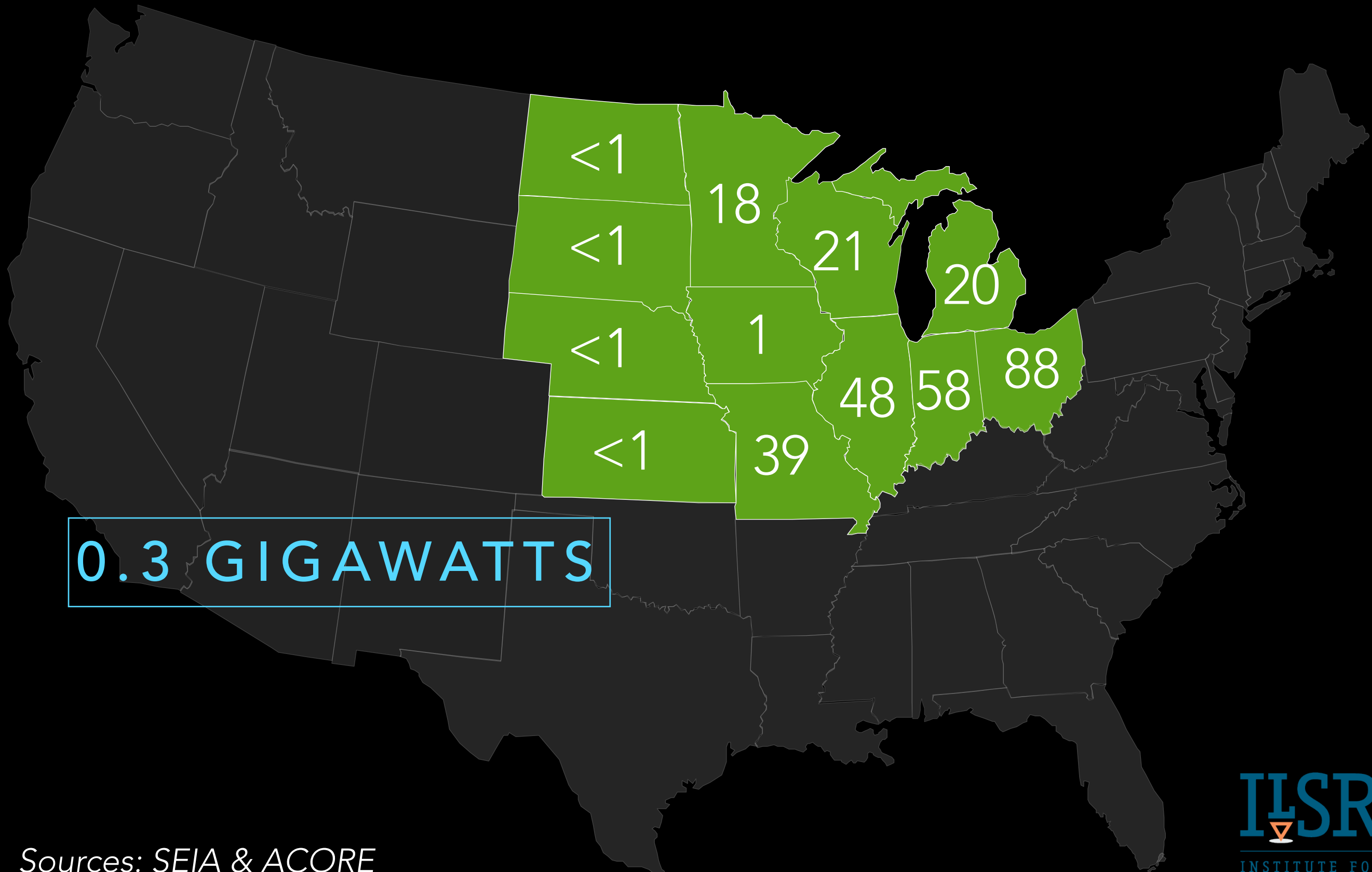
Attitude towards increased use of local wind energy

Germany's Energy Revolution Still People Powered

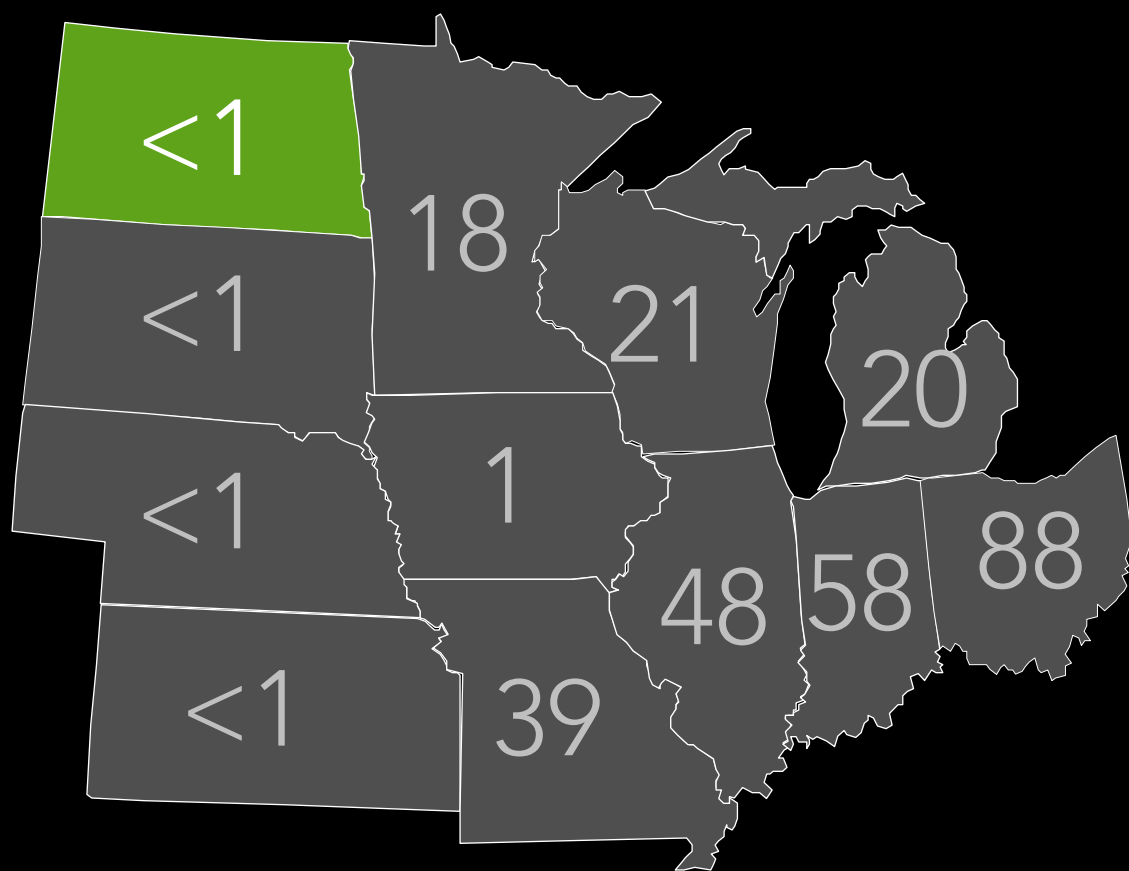


GREAT OPPORTUNITY

INSTALLED SOLAR CAPACITY (MW)

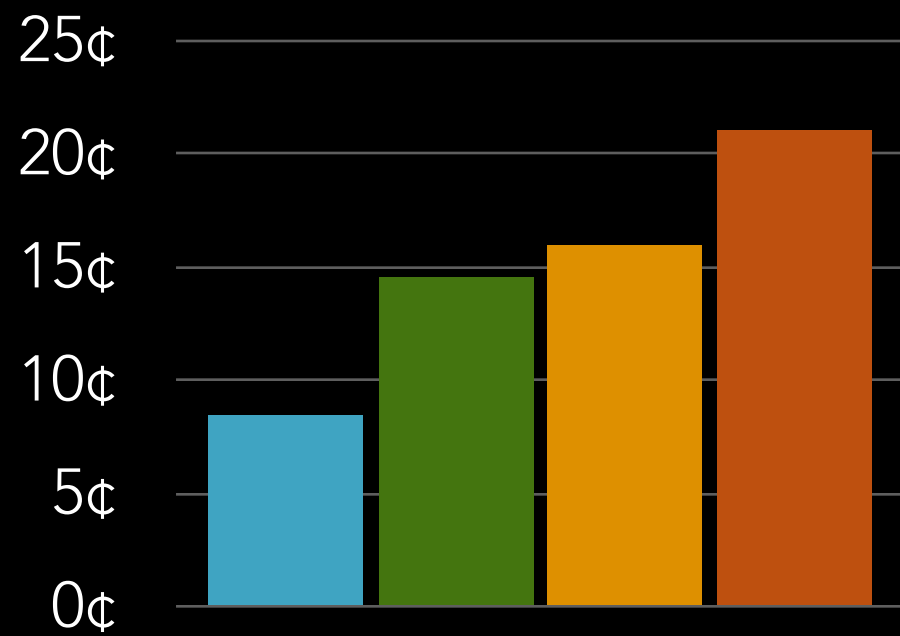


Sources: SEIA & ACORE



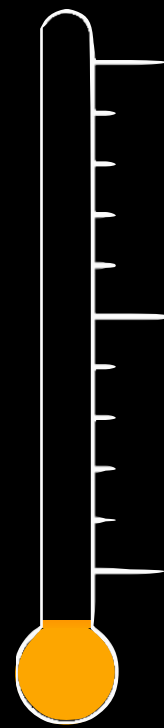
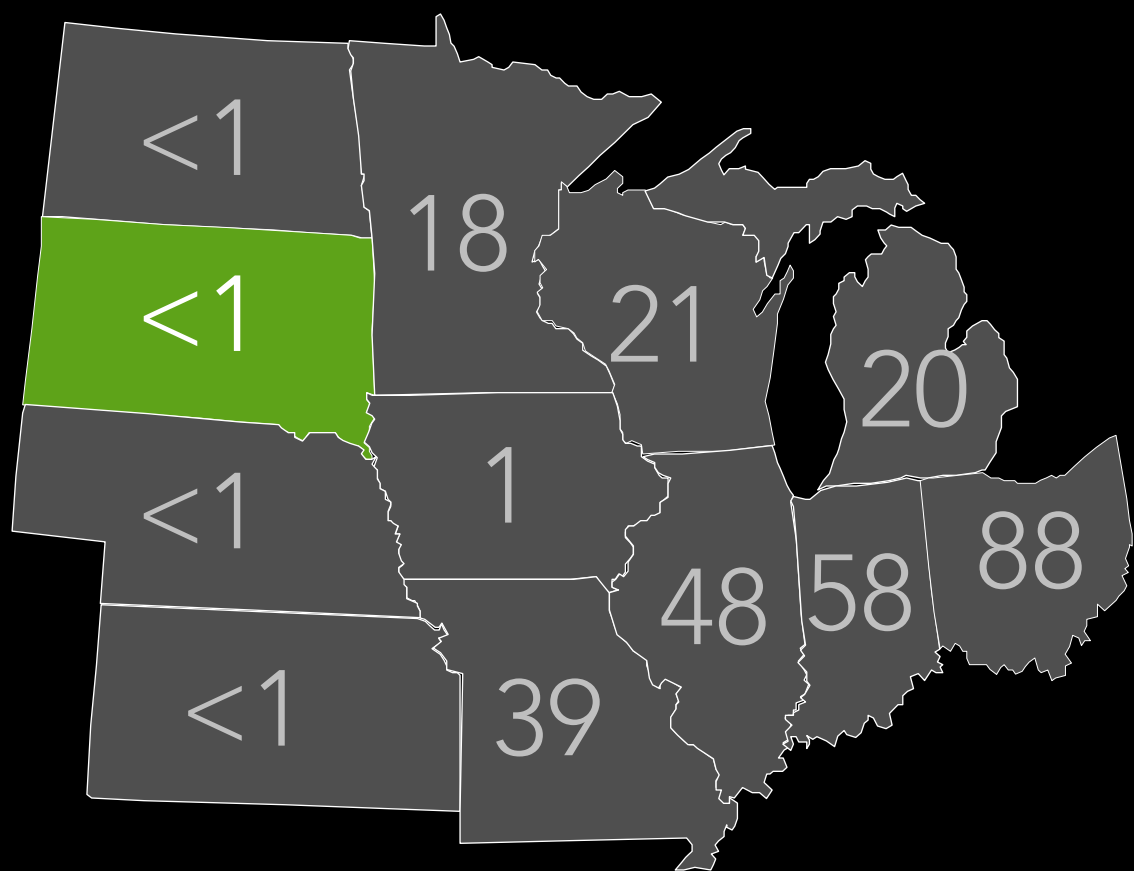
N. DAKOTA

- ☐ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering 100 KW
- ☒ State tax/cash incentives
- ☐ Utility cash incentives
- ☒ Property/sales tax benefit



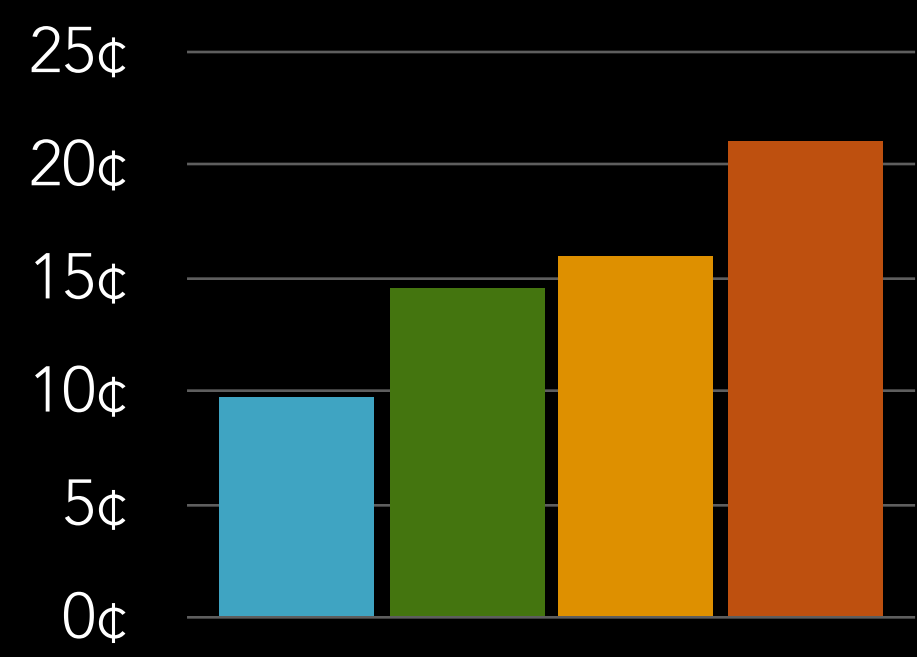
- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE

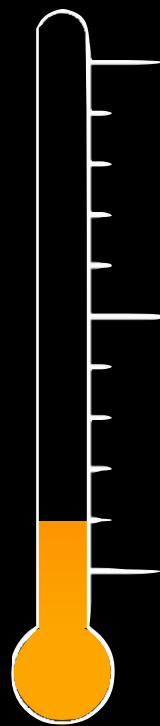
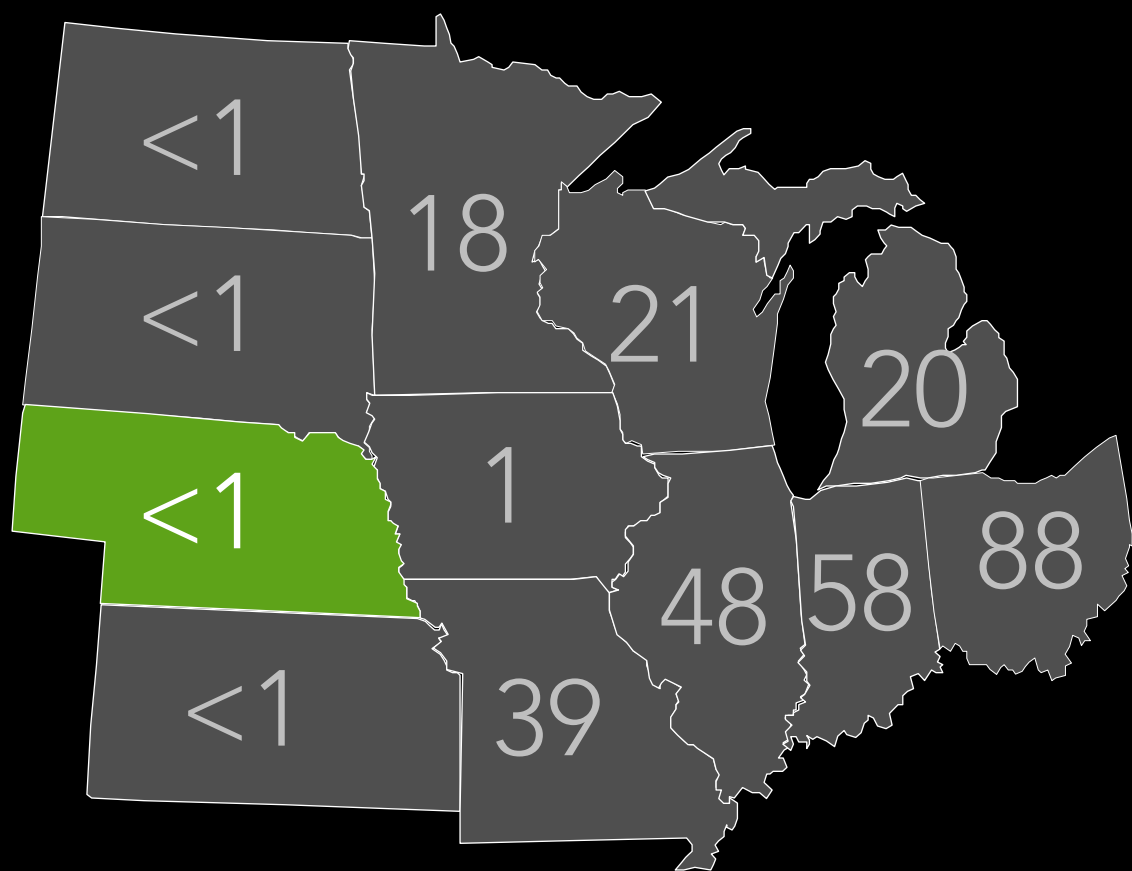


S. DAKOTA

- ☐ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☐ Net metering
- ☐ State tax/cash incentives
- ☐ Utility cash incentives
- ☒ Property/sales tax benefit

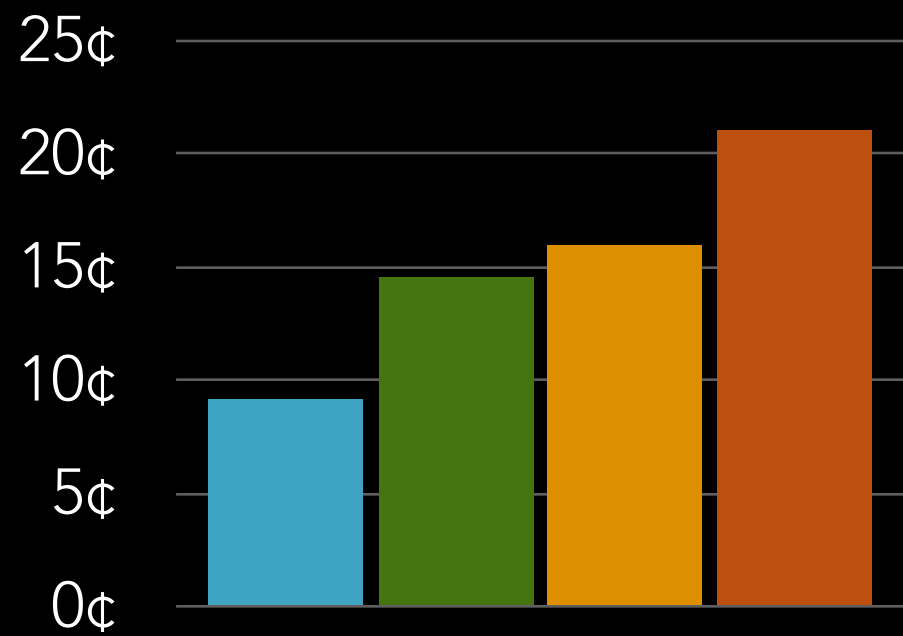


- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price



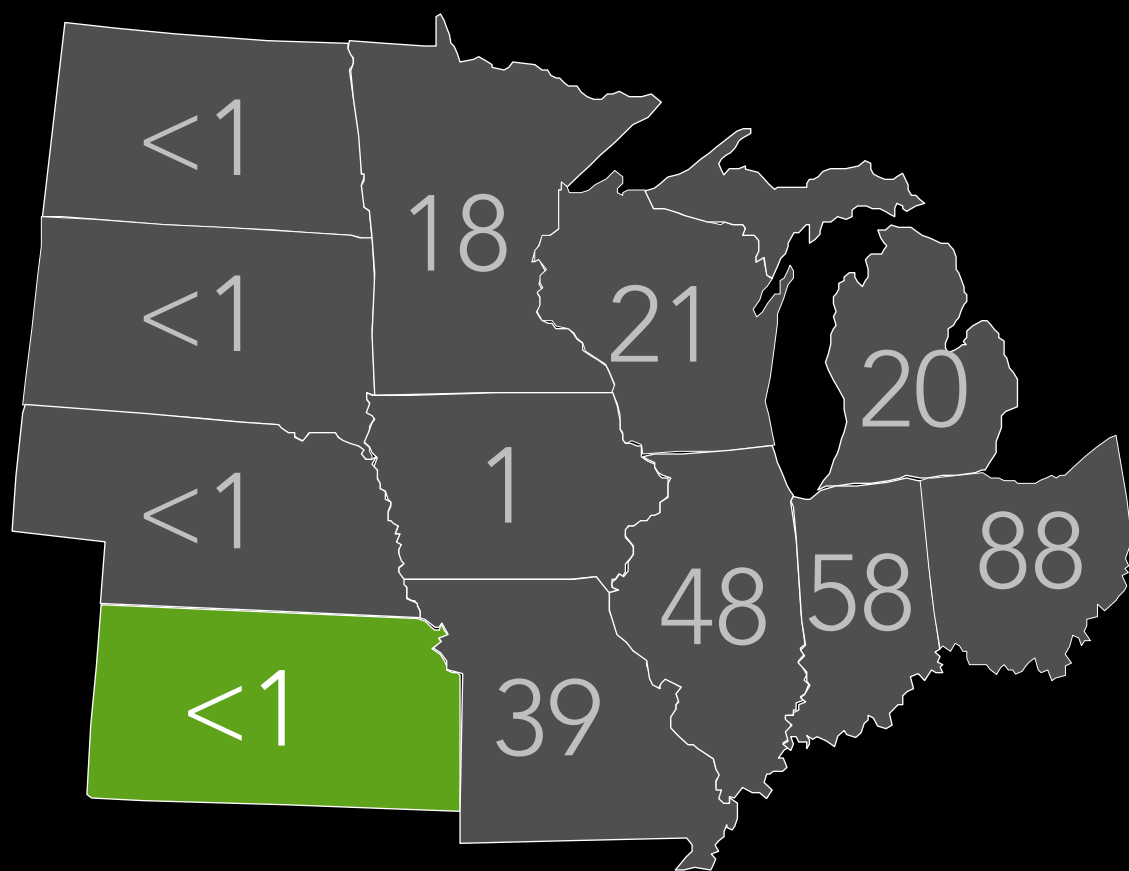
NEBRASKA

- ☐ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering 25 KW
- ☒ State tax/cash incentives
- ☐ Utility cash incentives
- ☐ Property/sales tax benefit



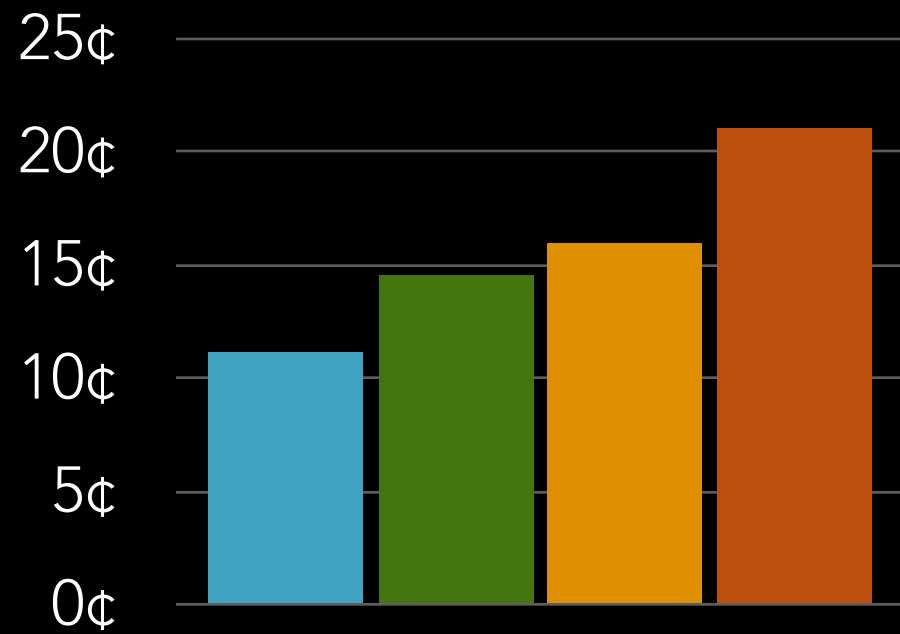
- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE



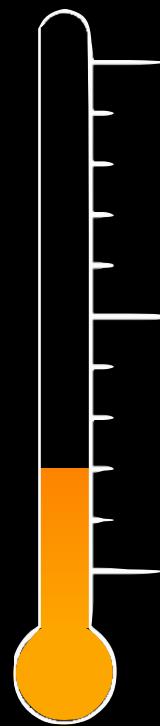
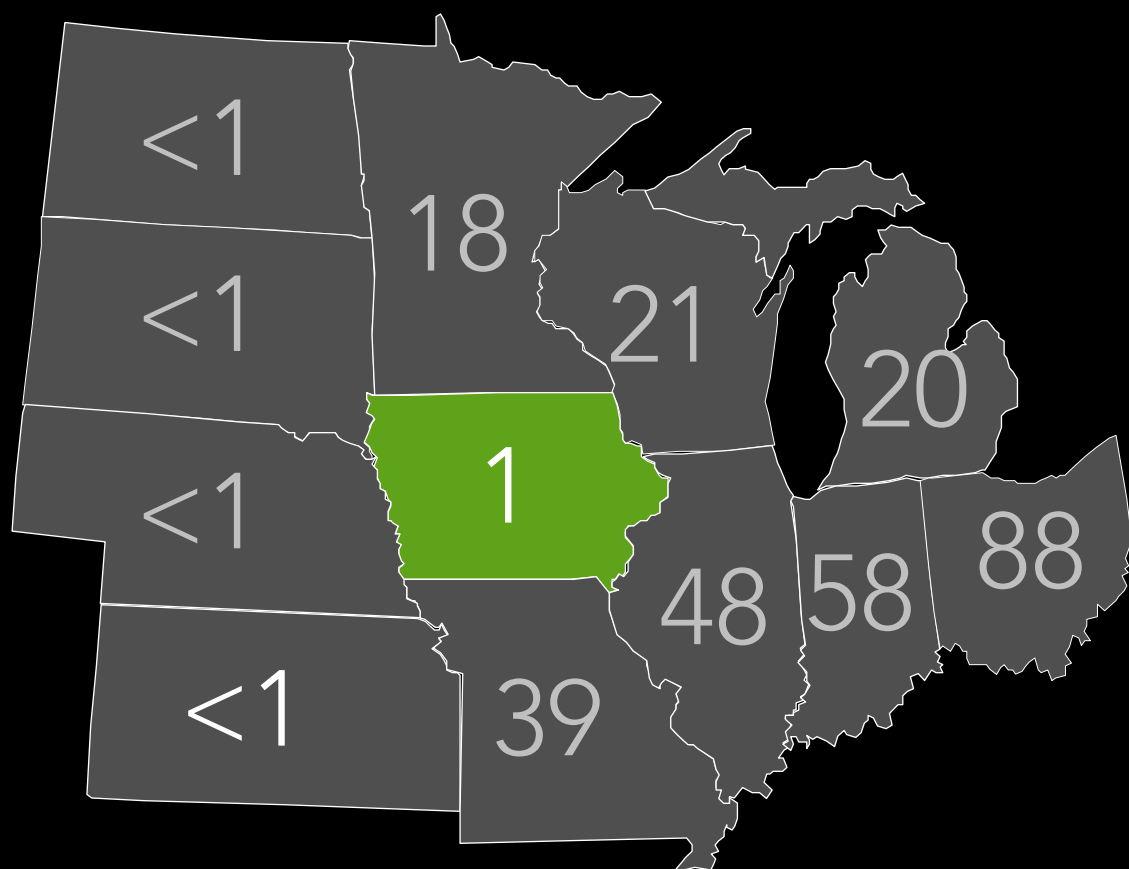
KANSAS

- ☐ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering 25/200 KW
- ☒ State tax/cash incentives
- ☐ Utility cash incentives
- ☒ Property/sales tax benefit

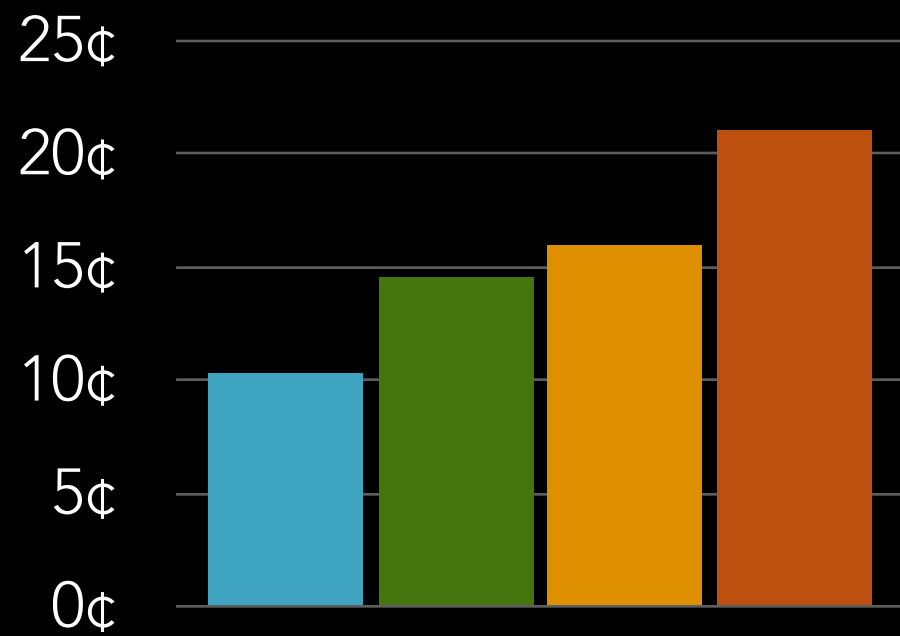


- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE



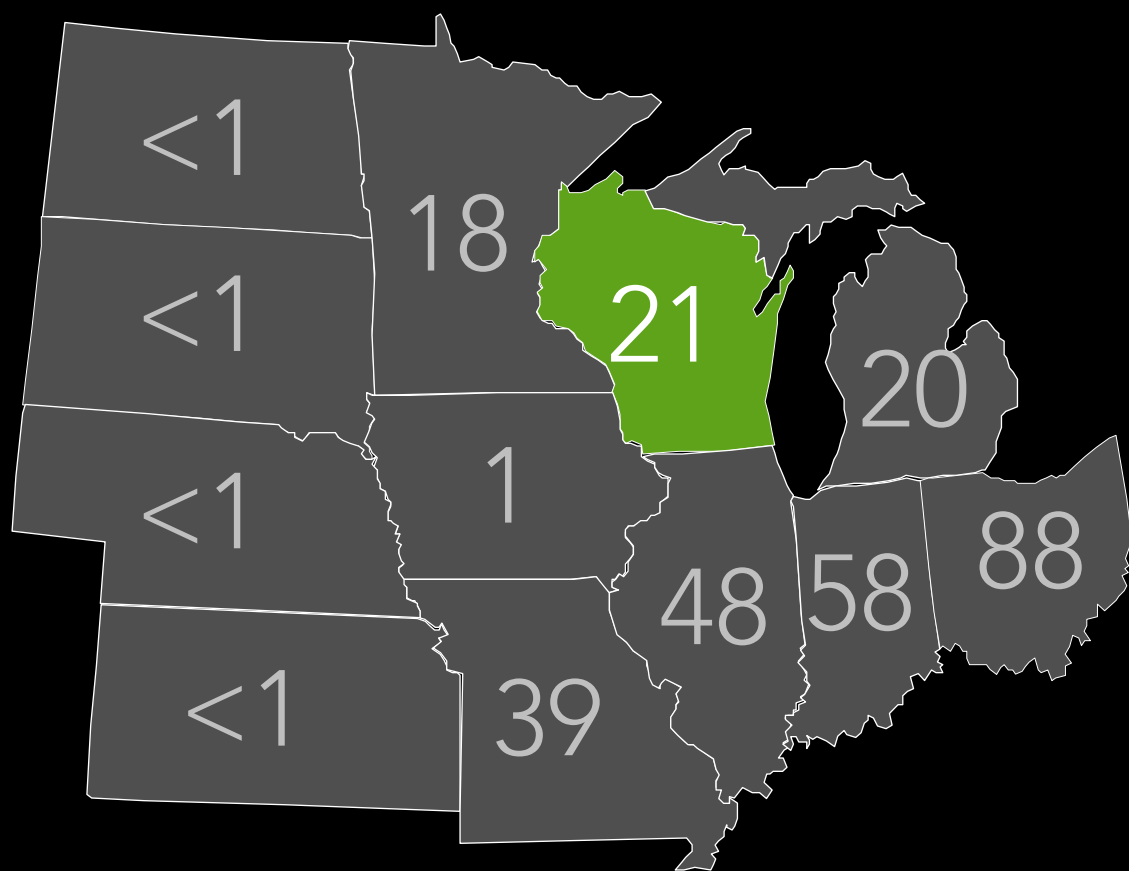
IOWA



- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

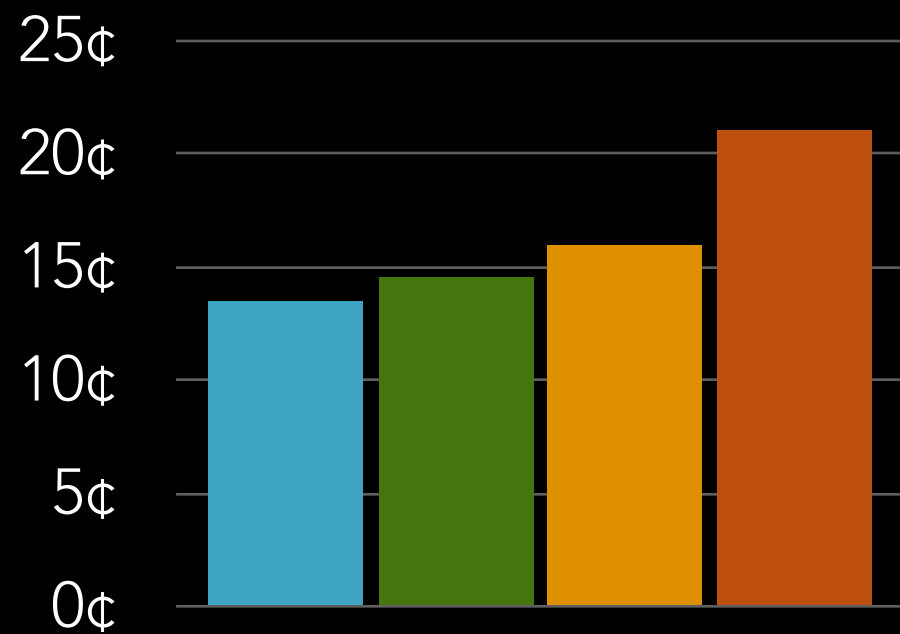
- ☐ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering **500 KW**
- ☒ State tax/cash incentives
- ☒ Utility cash incentives
- ☒ Property/sales tax benefit

Source: DSIRE



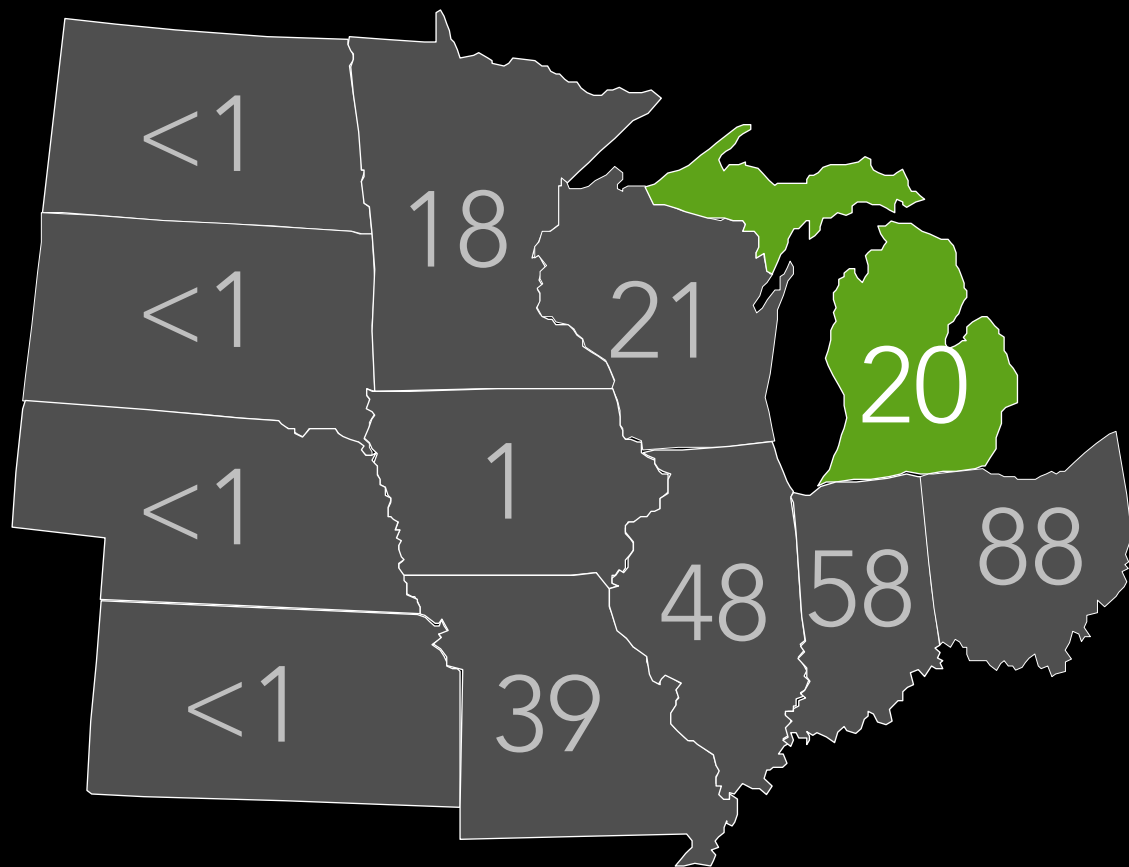
WISCONSIN

- ☐ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering 20/100 KW
- ☒ State tax/cash incentives
- ☒ Utility cash incentives
- ☒ Property/sales tax



- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE



MICHIGAN

☒ Solar standard (RPS)*
**triple credit under RPS*

☐ Community solar

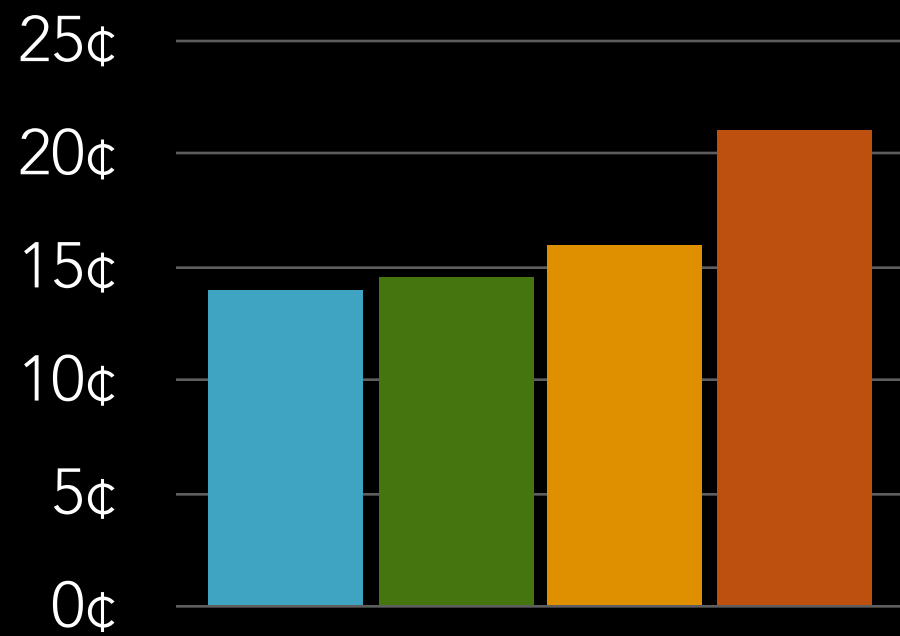
☐ Value of solar

☒ Net metering **150 KW**

☒ State tax/cash incentives

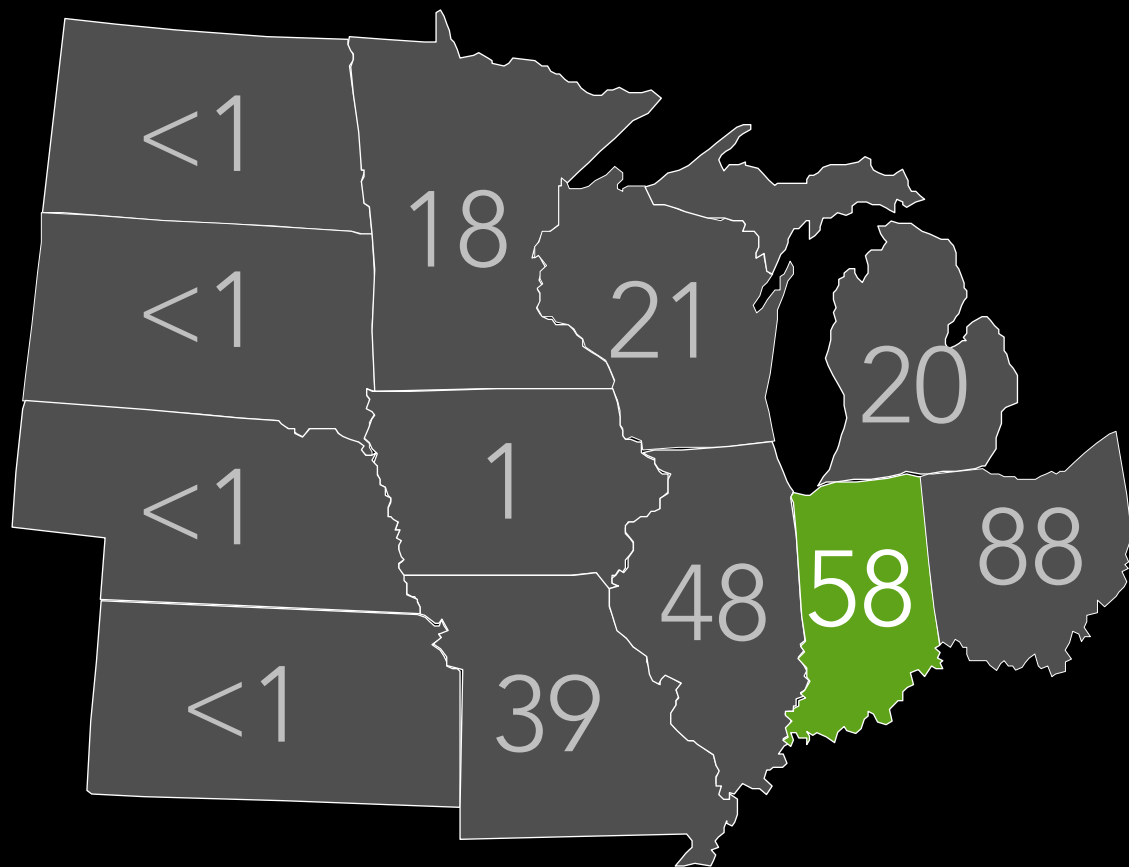
☒ Utility cash incentives

☒ Property/sales tax



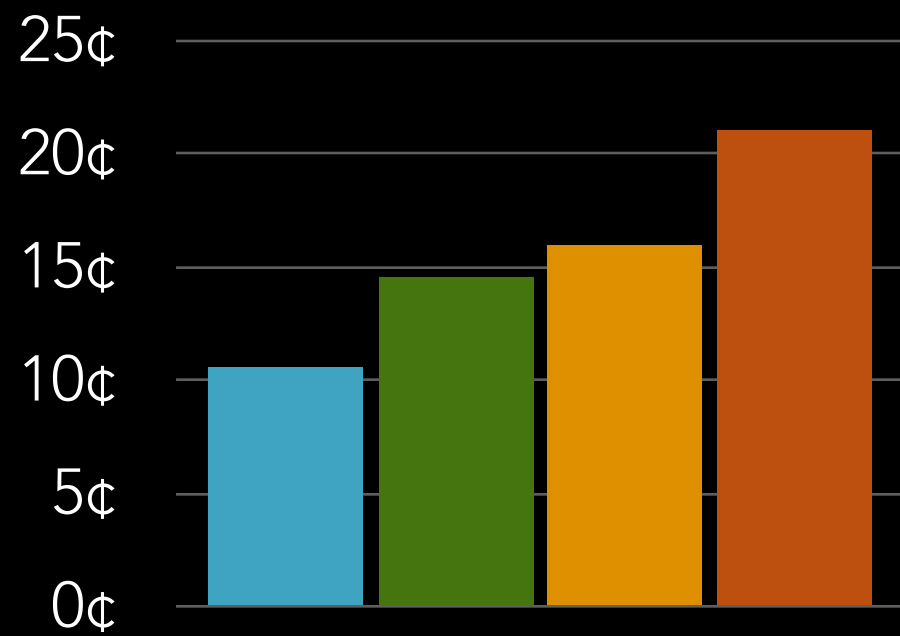
- Residential retail electricity price
- Value of solar
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- Solar price

Source: DSIRE



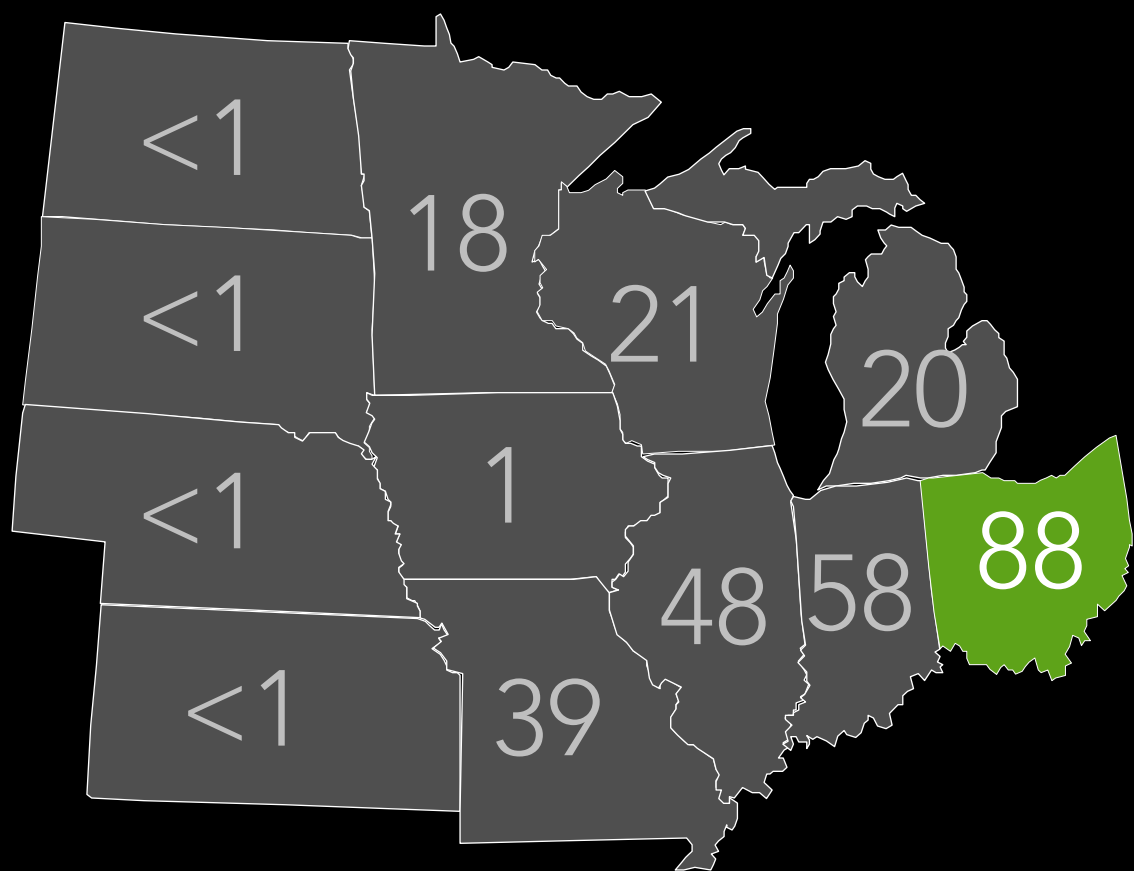
INDIANA

- ☐ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering 1000 KW
- ☒ State tax/cash incentives
- ☒ Utility cash incentives
- ☒ Property/sales tax



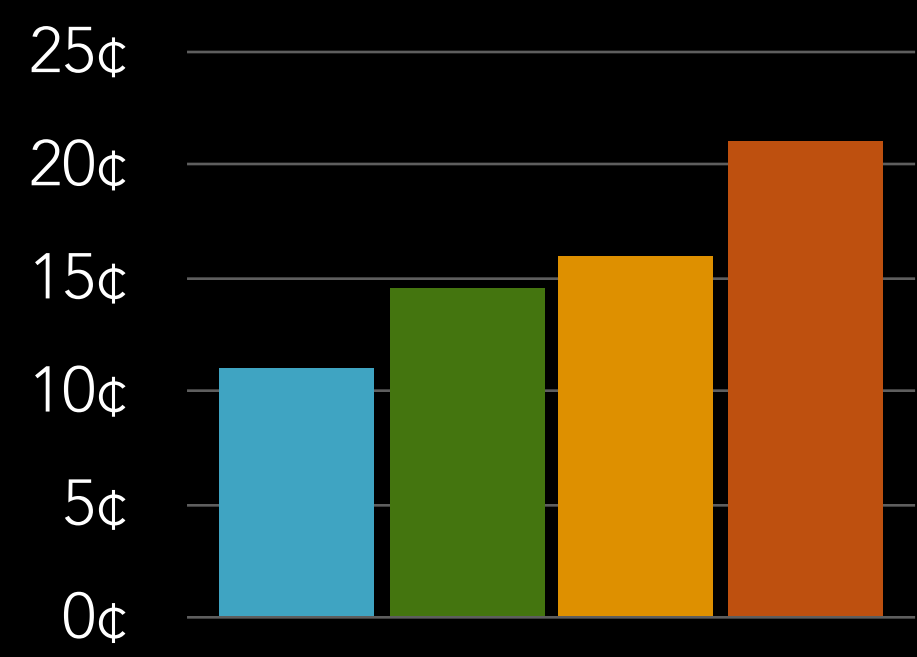
- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE



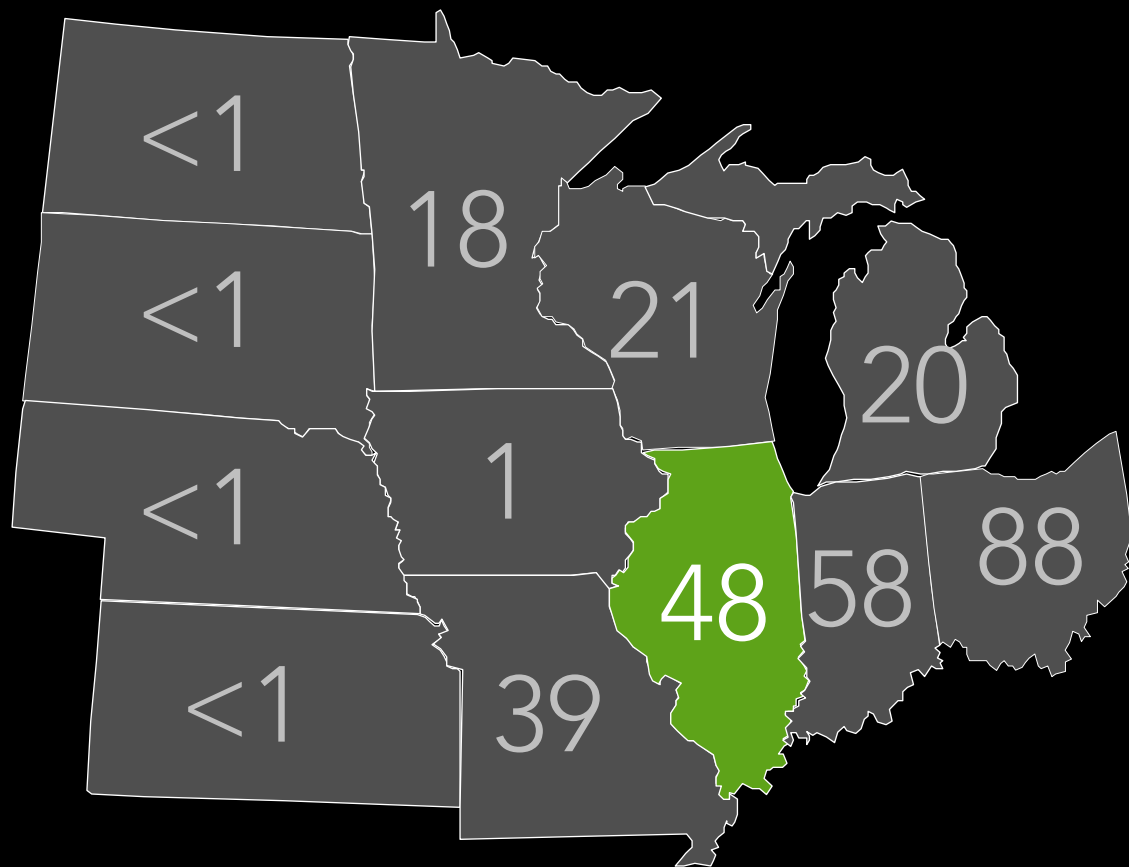
OHIO

- ☒ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering UNL. KW
- ☒ State tax/cash incentives
- ☒ Utility cash incentives
- ☒ Property/sales tax



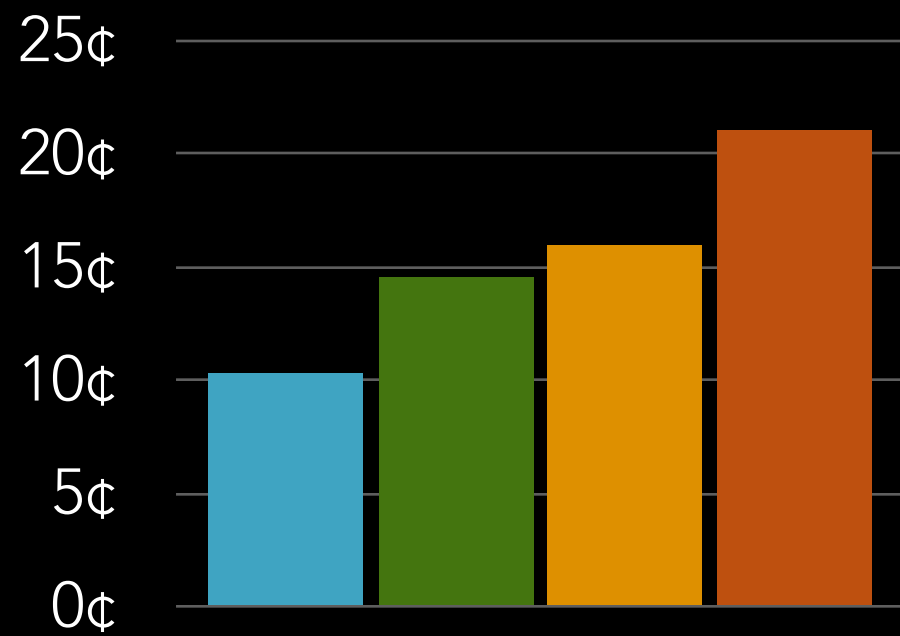
- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE



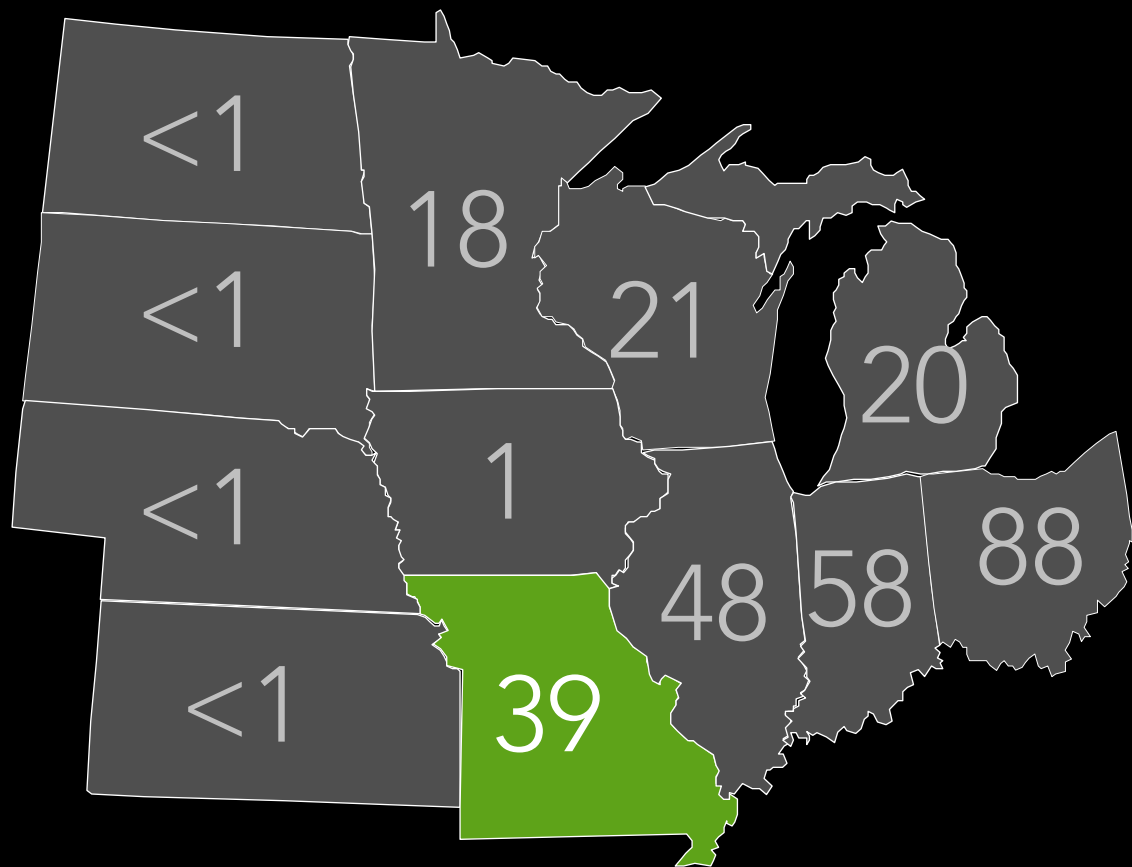
ILLINOIS

- ☒ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering 40 KW
- ☒ State tax/cash incentives
- ☒ Utility cash incentives
- ☒ Property/sales tax



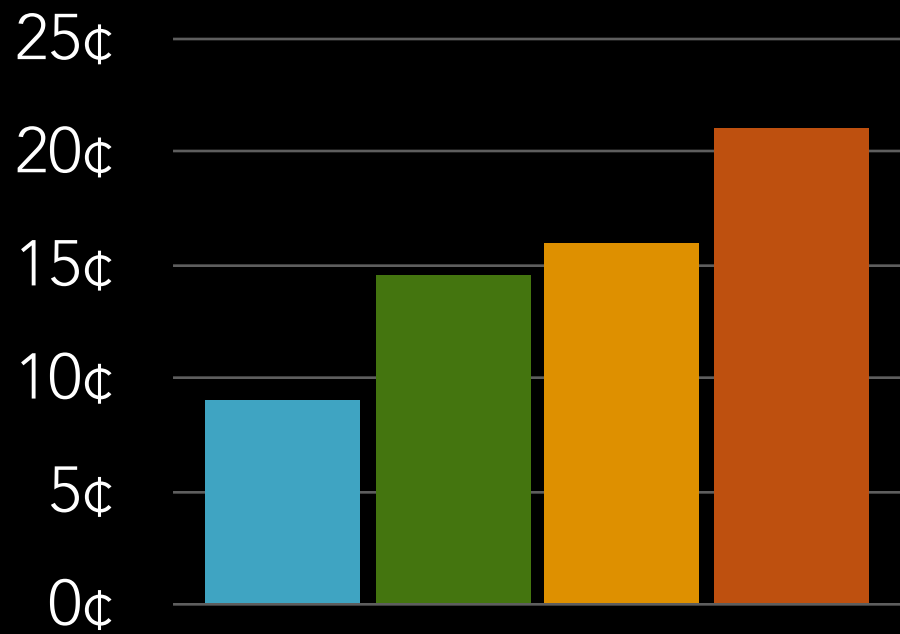
- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE



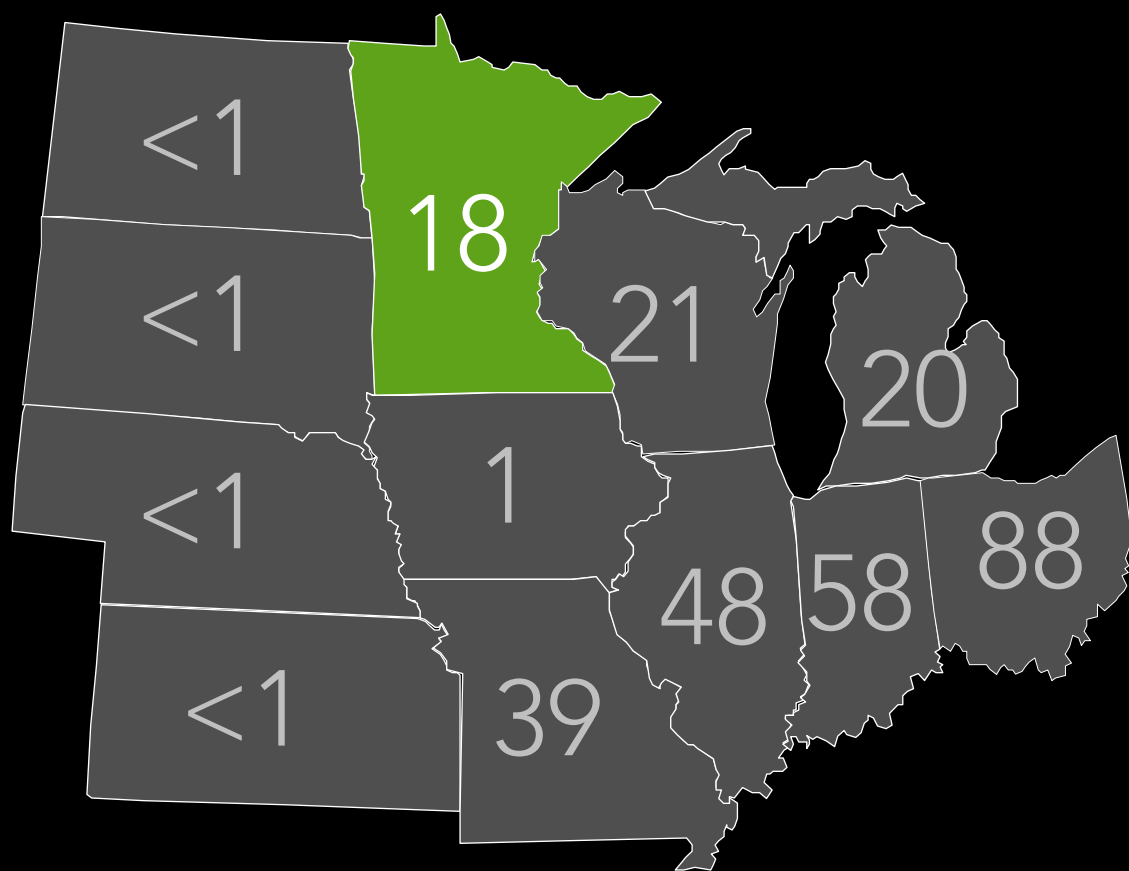
MISSOURI

- ☒ Solar standard (RPS)
- ☐ Community solar
- ☐ Value of solar
- ☒ Net metering 100 KW
- ☐ State tax/cash incentives
- ☐ ? Utility cash incentives
- ☒ Property/sales tax



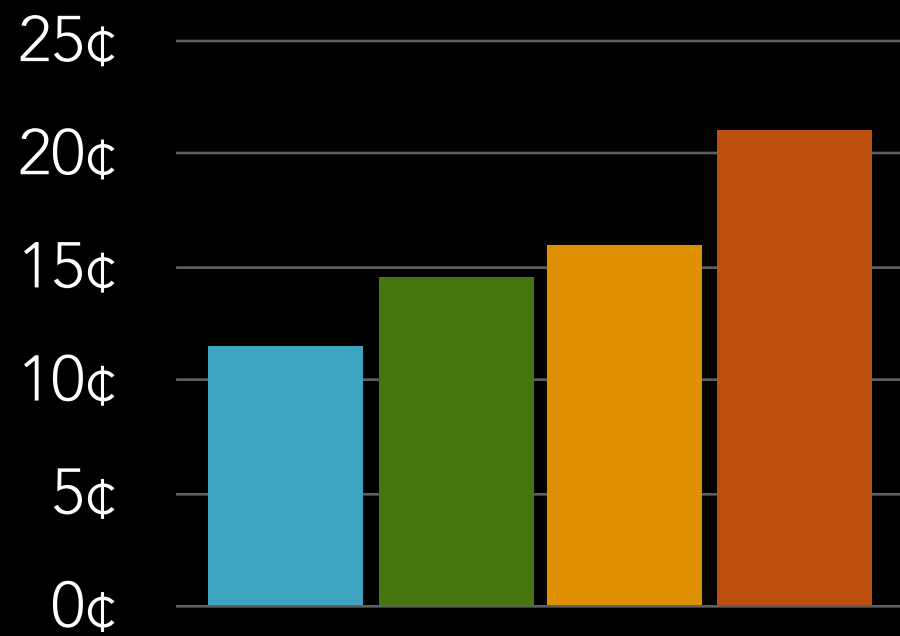
- Residential retail electricity price
- Value of solar
- Solar price with ITC
- Solar price

Source: DSIRE



MINNESOTA

- ☒ Solar standard (RPS)
- ☒ Community solar
- ☒ Value of solar
- ☒ Net metering 1000 KW
- ☐ State tax/cash incentives
- ☒ Utility cash incentives
- ☒ Property/sales tax

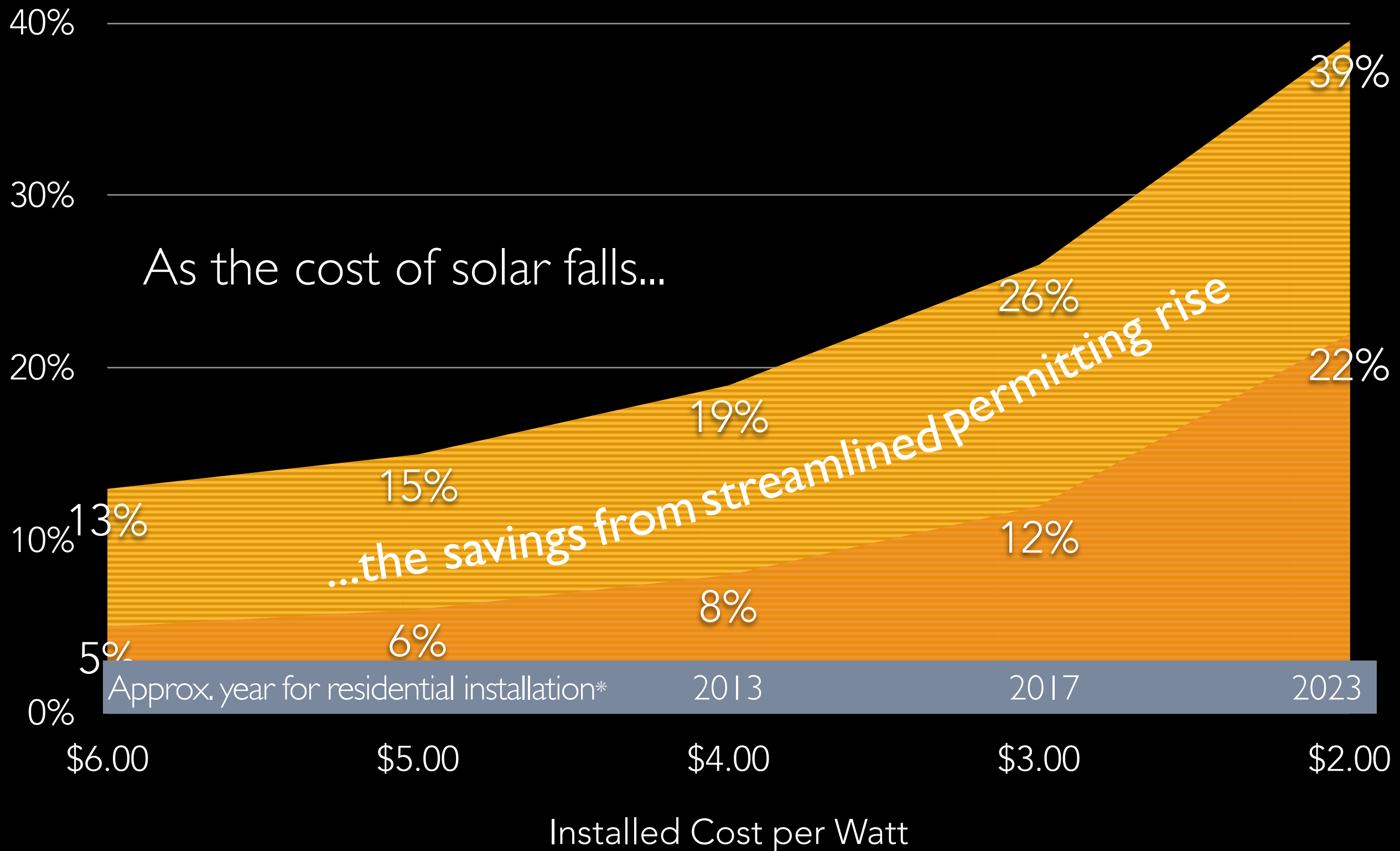


- Residential retail electricity price
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- Solar price

Source: DSIRE

LOCAL POLICY

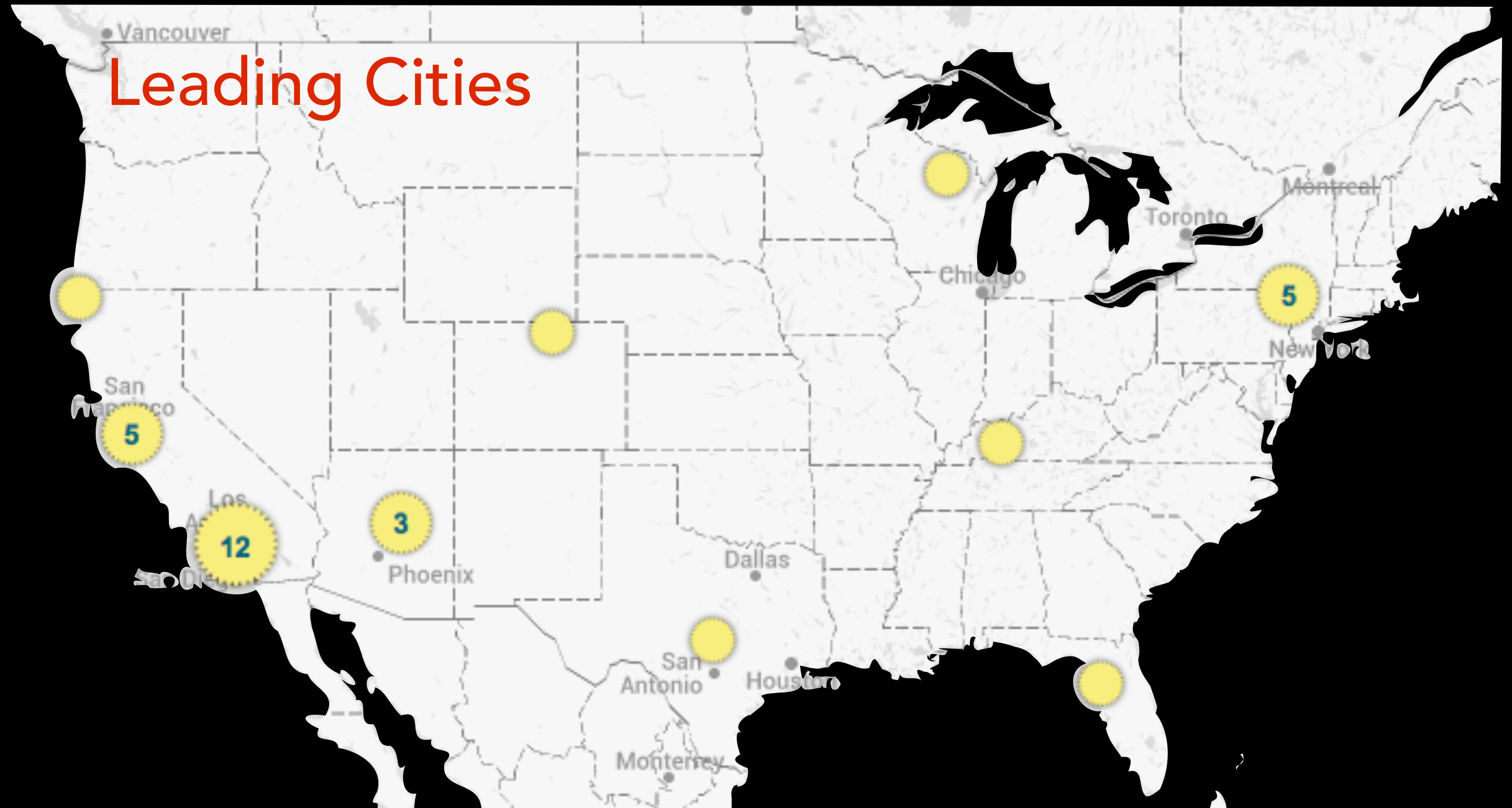
LOCAL PERMITTING



Data from *The Impact of City-level Permitting Processes on Residential Photovoltaic Installation Prices and Development Times* (LBNL, 2013)

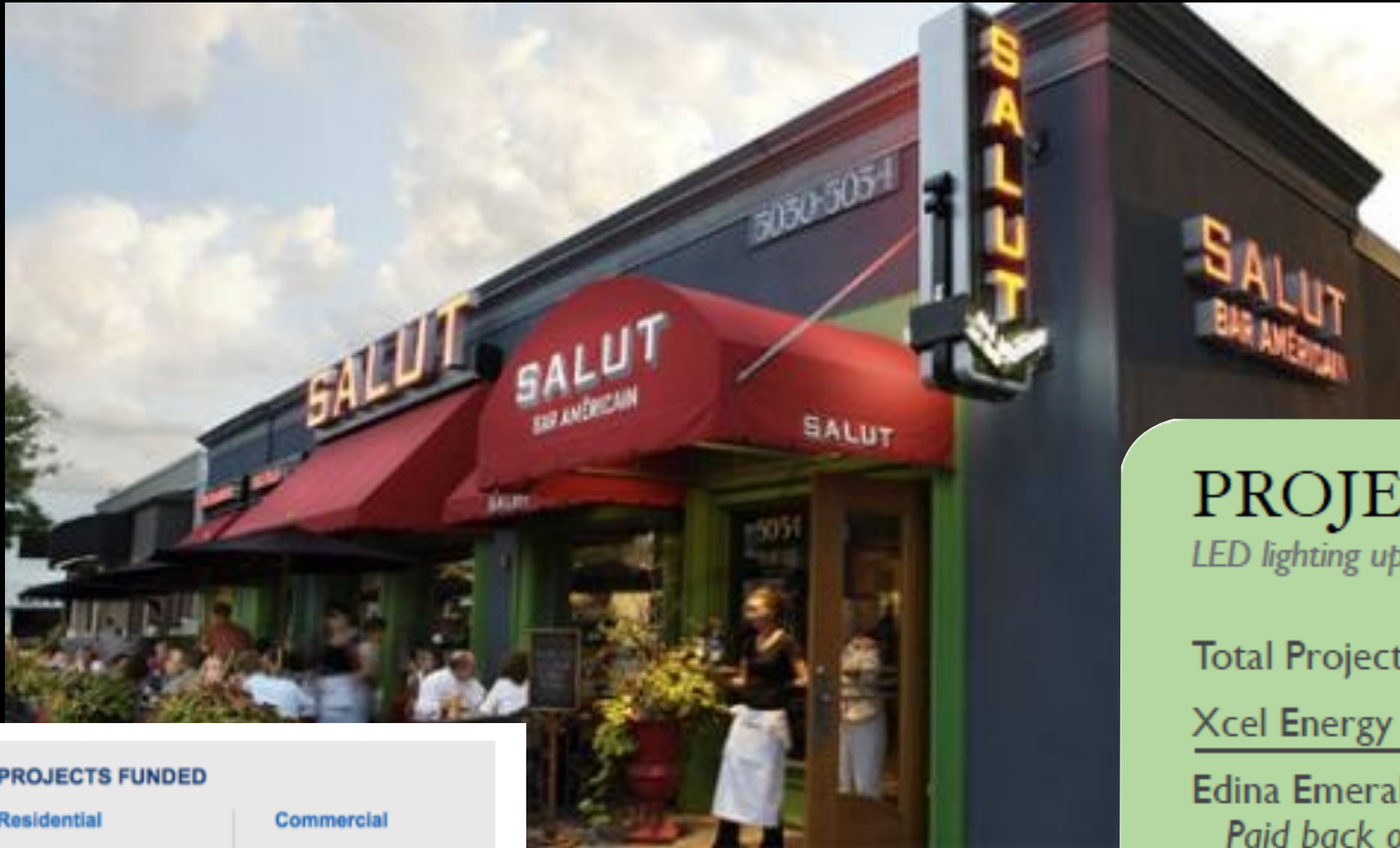
*From ILSR's Rooftop Revolution reports: <http://www.ilsr.org/rooftop-revolution/>

LOCAL PERMITTING



Vote Solar: Project Permit

LOCAL ENERGY FINANCING



PROJECT AT A GLANCE:

LED lighting upgrades and kitchen hood fan controls

Total Project Cost:	\$ 50,622
Xcel Energy rebates	- \$ 11,314
Edina Emerald Energy Program loan:	\$ 39,308
<i>Paid back on property taxes</i>	

Avg. Annual Loan Payment:	\$ 9,727
Annual Energy + Maint. Savings	\$ 15,296
NET SAVINGS / YEAR:	\$ 5,569

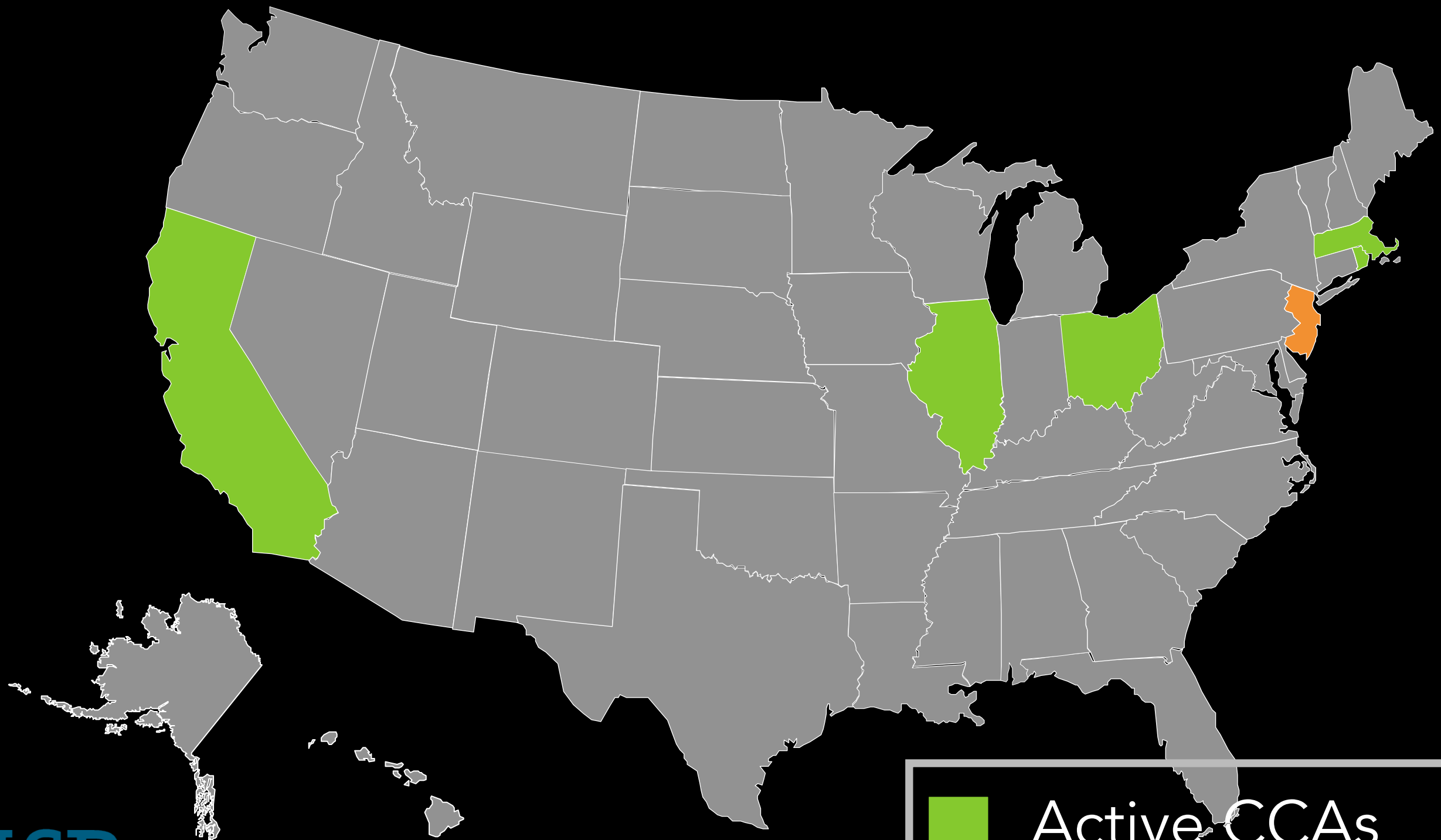
PROJECTS FUNDED

Residential	Commercial
1,902	61
Total Contracts Funded	\$64,235,836
Jobs Created/Retained	778
Percent of Projects Completed by Local Contractors	80%

Sonoma County Energy Independence Program
update, 9/24/13.

<http://pacenow.org/>

COMMUNITY CHOICE



FRANCHISE

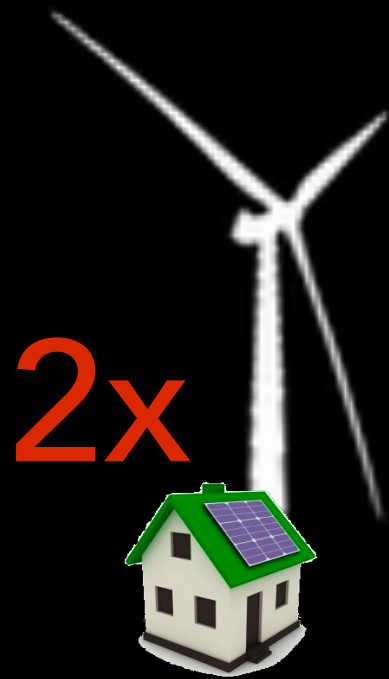


Cities

Utilities

LEVERAGE

LOCAL POWER



2x



Coal

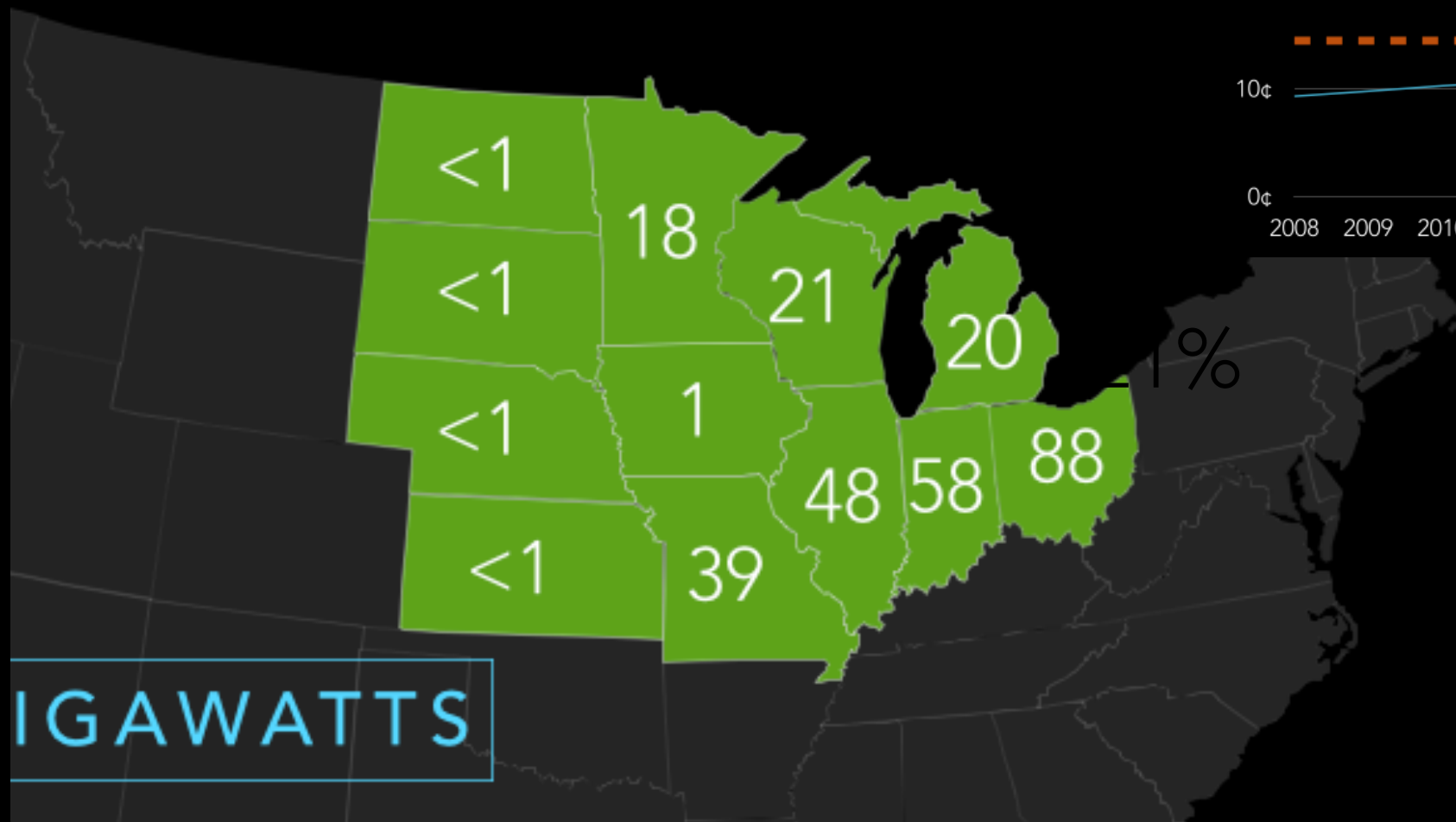


BOULDER

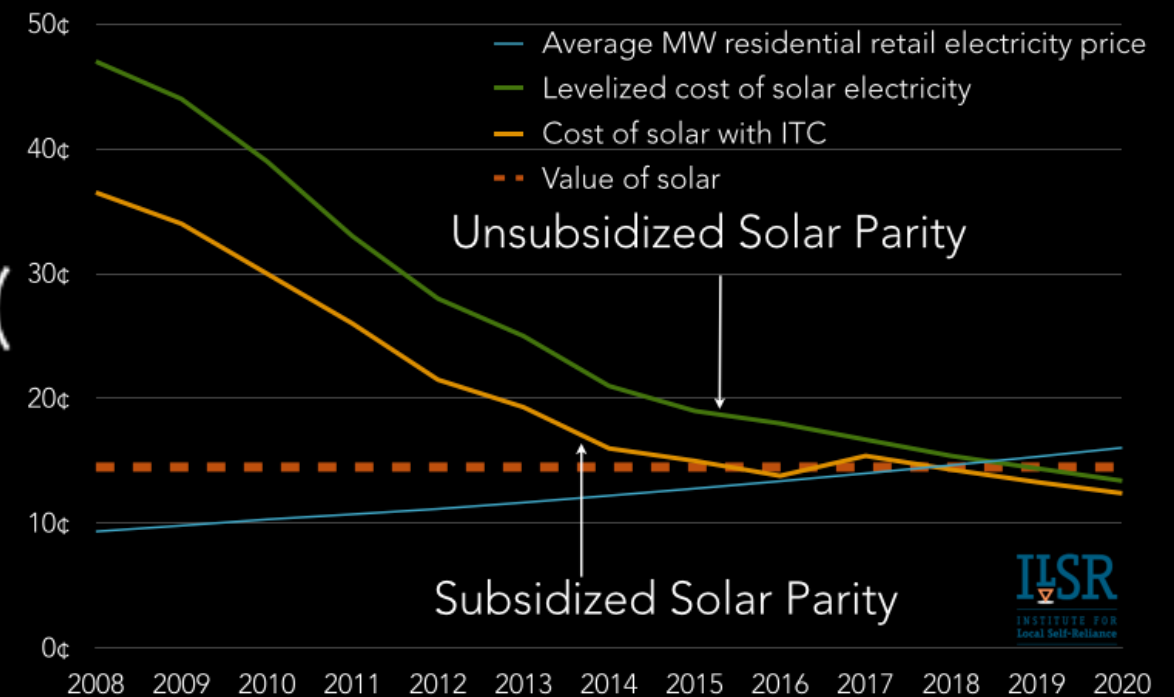
SANTA FE

THANK YOU!

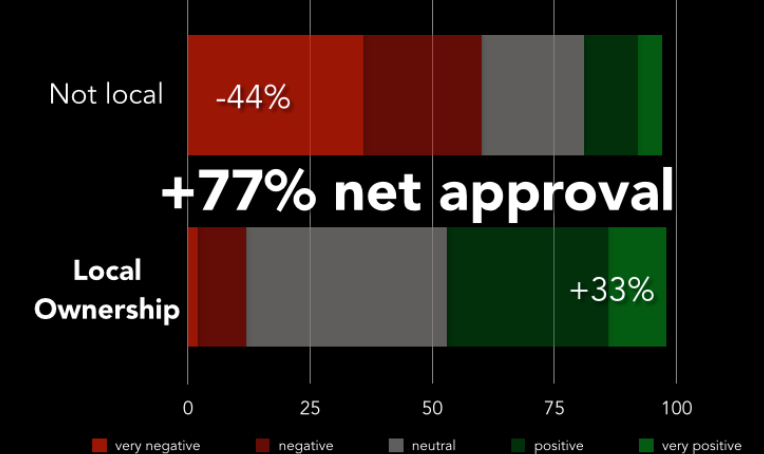
ALLIED SOLAR CAPACITY (



SOLAR PARITY IS COMING



LOCAL POWER VALUE



Attitude towards increased use of local wind energy

<http://www.ilsr.org/rooftop-revolution/>