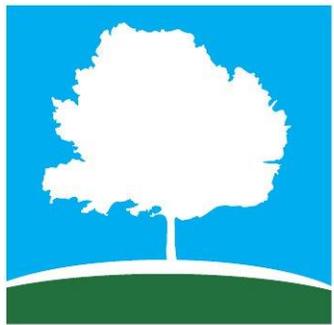


# Solar Energy in Kansas

Scott White, Cromwell Solar

Dialog on Sustainability

July 23, 2016



Cromwell  
**SOLAR**

**CromwellSolar.com**

# About Cromwell Solar



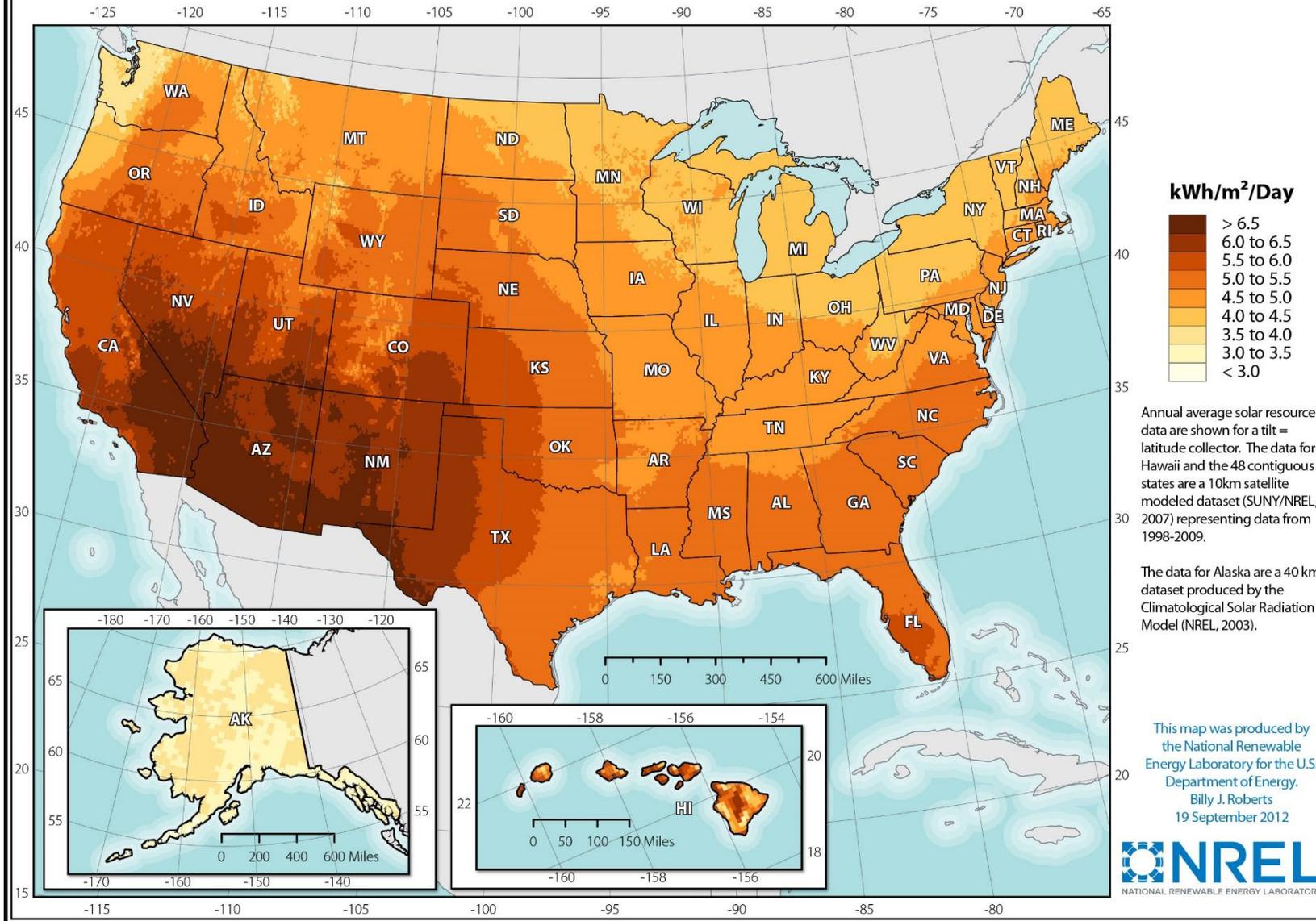
- ▶ Located in Lawrence
- ▶ Founded in 1982, under same ownership since 1999.
- ▶ 32 Full time employees
- ▶ Have installed >300 solar projects and >4,100 kW of solar PV.
- ▶ Cromwell Solar has three NABCEP PV professionals
  - ▶ North American Board of Energy Professionals - the industry's highest certification.

# Cromwell cont.

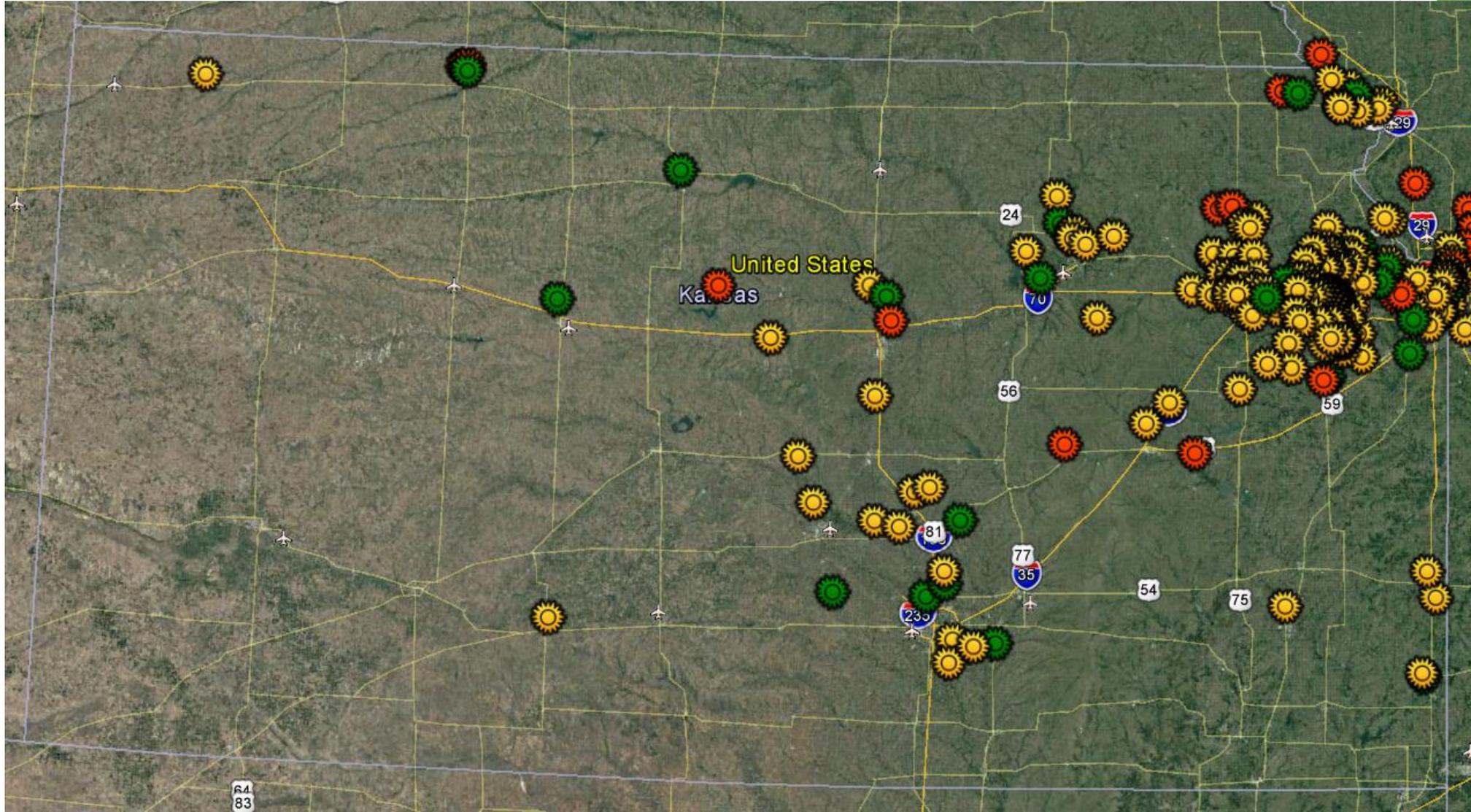
- ▶ Only solar installer in Kansas to offer a lease as a finance option (through Mid America Bank, right)
- ▶ Our largest project was installed in 2015 - a 400 kW (1,200 panel) project in Norton, KS.
- ▶ Installed over 240 projects and 2.8 MW of solar in Kansas (and 300+ and 4.1 MW overall).



# Photovoltaic Solar Resource of the United States



# Kansas Solar Installations (Cromwell)



# Kansas Solar

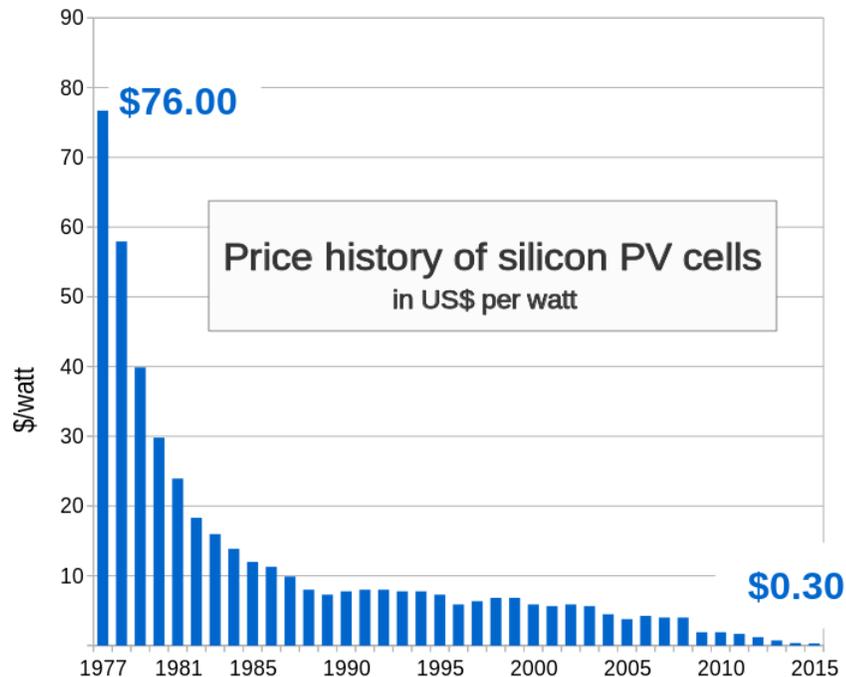
- ▶ There are more than 670 solar installations in Kansas for a total of >8,500 kW of installed solar capacity by at least 60 different entities (companies or groups, not counting individuals).
- ▶ Kansas installations lag behind many other states, but capacity has increased significantly in each of past few years.
- ▶ The largest solar projects in Kansas are:
  - ▶ Midwest Energy Community Solar Garden, Colby, 1,000 kW
  - ▶ IKEA, Merriam, 730 kW
  - ▶ Topeka VA Hospital, Topeka, 700 kW
  - ▶ Fort Riley 2<sup>nd</sup> Armored Brigade HQ, Ft. Riley, 500 kW
  - ▶ New Age Industrials, Norton, 400 kW



# What's driving solar projects?

- ▶ Decreasing price of solar modules and infrastructure
- ▶ Favorable policies
  - ▶ Federal Tax Credit (30%)
  - ▶ Accelerated Depreciation (5%/year for 5 years, businesses only)
  - ▶ Net Metering

# The decreasing price of solar panels has driven the increase in solar installations.

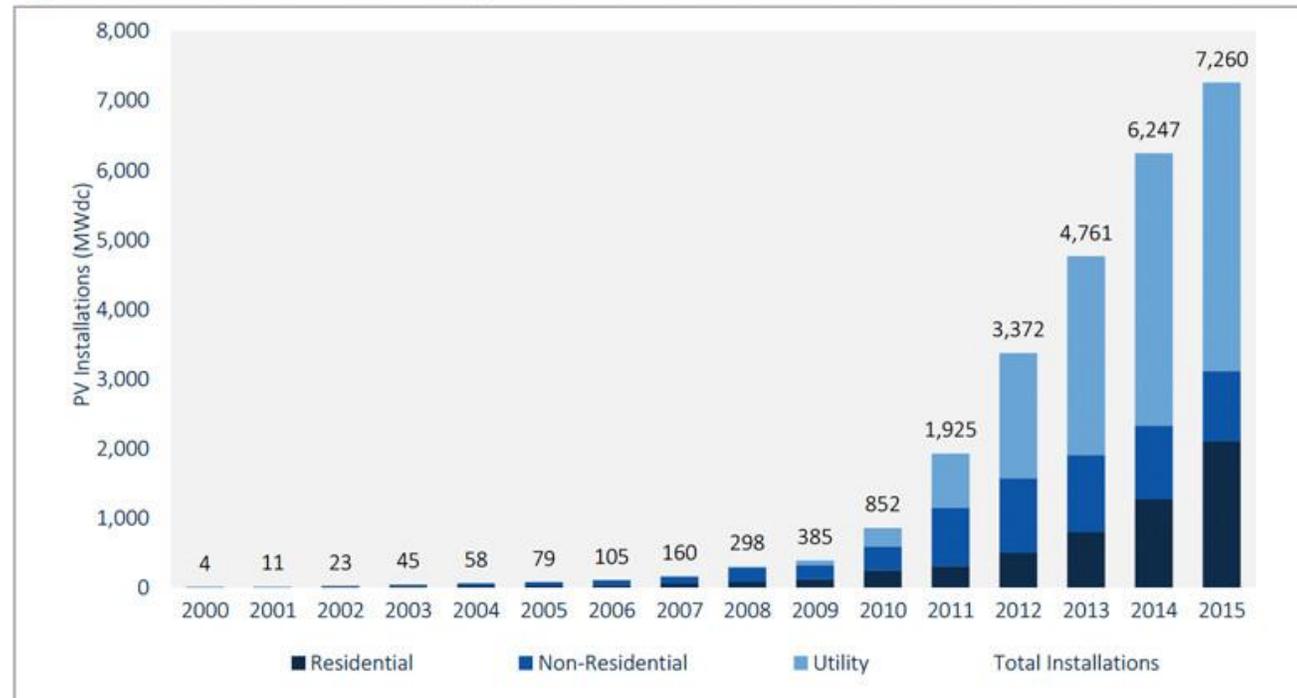


Source: Bloomberg New Energy Finance & pv.energytrend.com

- ▶ The biggest driver to the increase in solar installations is the declining cost of solar cells.
- ▶ Since 1977, the price of silicon PV cells has dropped 99.6%.
- ▶ Cost of other equipment has dropped too, but not as dramatically.
- ▶ As price has gone down, installations have gone up...

# Growth of Solar in U.S. since 2000

Figure 1.1 Annual U.S. Solar PV Installations, 2000-2015



© 2016

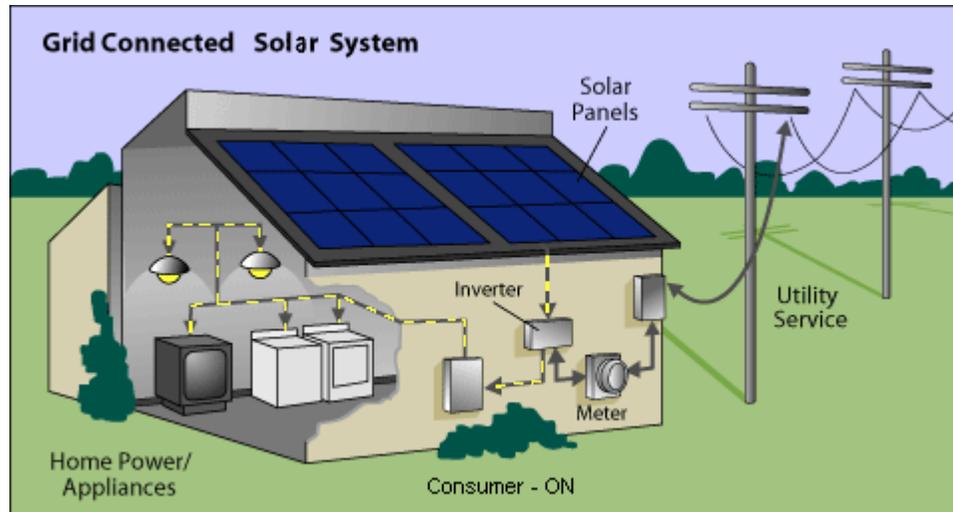
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SEIA  
Solar Energy  
Industries  
Association®

# Policies Driving Solar

- ▶ Federal Tax Credit - 30% of total installation price (all)
- ▶ Accelerated Depreciation - 5%/year for 5 years (Businesses)
- ▶ Net Metering - State-mandated for IOU's (Westar, KCP&L, Empire), voluntary for other utilities.
  - ▶ Most rural electric utilities have a net metering policy.
  - ▶ Many municipal utilities do as well.
  - ▶ No two policies seem to be exactly the same in terms and caps.

# Net Metering



# Other issues

- ▶ Changes to Net Metering rules
  - ▶ Westar - 2015 attempt to change rate structures of “customer-generators”
  - ▶ Attempts tabled, but utility did get a new Distributed Generation Tariff for the books
    - ▶ New generic docket opened by KCC to study costs and benefits of distributed generation to grid.
    - ▶ Kansas Leadership Center separately has convened stakeholders to look at the issue and develop a discussion guide for distributed generation.
- ▶ Utility-owned solar
  - ▶ Westar has proposed community solar for their territory
  - ▶ KCP&L is building solar gardens in Missouri

# Other issues (cont.)

- ▶ Utility rates are still expected to rise
  - ▶ Westar and KCP&L both have significant amounts of expenditures that have been approved but have not been rolled into rates.
- ▶ Tax incentives continue on the books through 2021 with the percentage dropping in last two years (sunset)
- ▶ Costs of solar will likely continue to drop, but likely at a slower rate than in previous few years.



## Carport with solar

Not all roofs are feasible for solar for reasons such as shade, lack of space and, like this one, complex roof-lines. Ground-mounted solar arrays or carports can be an option.



## Carport and roof-mount

Another carport for a building that has a small and complex roof. This one is at the Mid-America Bank in Lawrence.



## Ground-mount solar installation

A 10-kW array at Perry-Lecompton High School.

# Two Baldwin City installations



# Contact Info

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