
N
Google™
Image State of Arkansas
Pointer 34°44'47.98" N 92°17'20.22" W elev 344 ft Streaming 100%
Eye alt 1071 ft

2001 - Net-metering passes in legislative session without a single no vote. Act known as the Arkansas Renewable Energy Development Act(AREDA).

2002 - Net-metering rules and procedures promulgated at PSC.

2007 - Net-metering improved by extending forfeiture rule to end of calendar year.

2009 - HB 1851 - Renewable Energy Feed-in Act fails in House Ins. and Commerce Committee.

2010 - Governor launches Renewable Technology Rebate Plan.

2011 - SB 721 - CLEAN Energy Act fails in Senate Ins. and Commerce Committee.

2013 - HB 1390 – Distributed Generation Act fails in Joint Energy Committee.

2013 - Net-metering improved slightly by new formula extending forfeiture period to April of following year.

2013 - PSC opens docket addressing impediments to net-metering.

2013 - PSC removes mutual indemnification clause for entities with sovereign immunity.

2013 - PSC adds meter-aggregation to net-metering rules.

2015 - HB 1885 The Arkansas Distributed Generation Act fails in Joint Energy Committee.

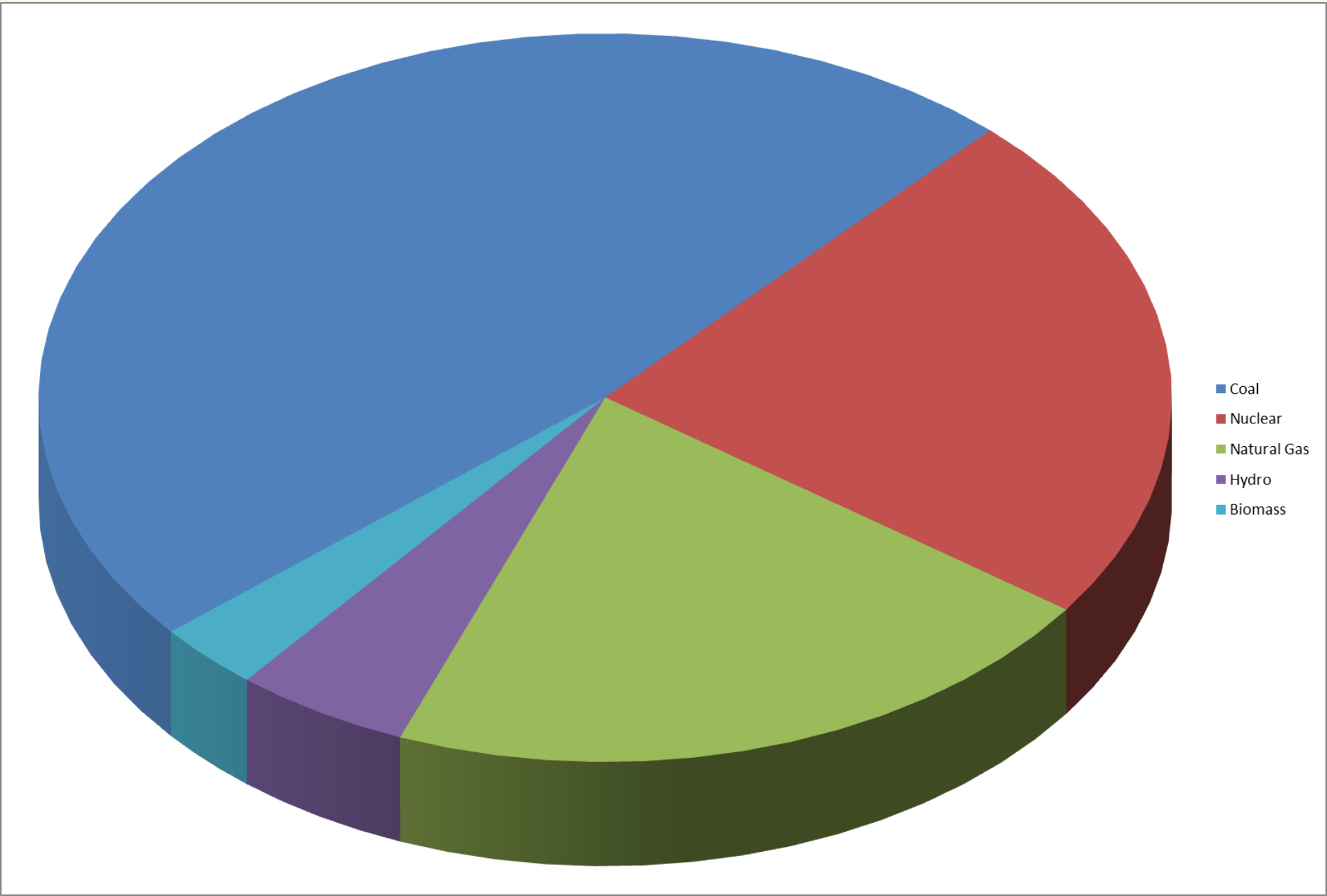
2015 – HB 1633 becomes Act 1088 Allowing a utility to enter into a Power Purchase Agreement and receive additional sum if PPA is not with an affiliate of the utility. Does not apply to an electric cooperative corporation or electric utility customers.

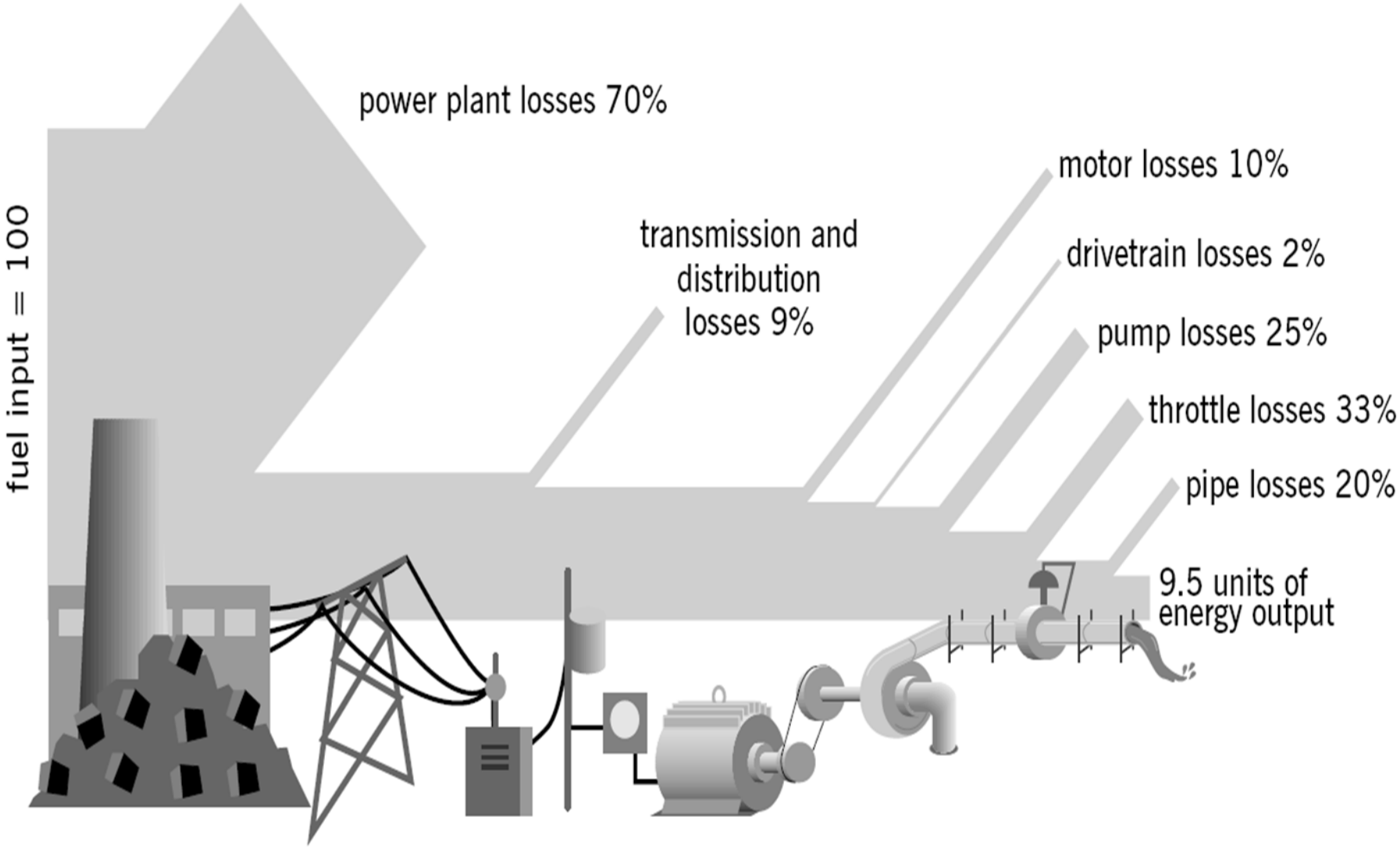
2015 – HB 1004 becomes Act 827. Net-metering improved by allowing indefinite carry over of unused kWh generation with option to cash out at avoided cost rate after a twenty four month period. Act 827 also increased the size limits for residential and commercial installations to the size necessary to create 110% of highest monthly usage. The Act also directed the PSC to determine if the costs of net-metering policy outweigh the policy's electrical system benefits, public benefits and environmental benefits. Language allowing utilities to charge net metering customers extra fees, if costs outweigh benefits, has been in AREDA since its passage in 2001. The difference is that Act 827 shifts the burden of proof from the utilities to the PSC.

2016 – PSC opened docket 16-027-R to satisfy the requirements of Act 827.

2016 – PSC opened docket 16-028-U without a direct requirement from the legislature to investigate policies related to renewable distributed generation.

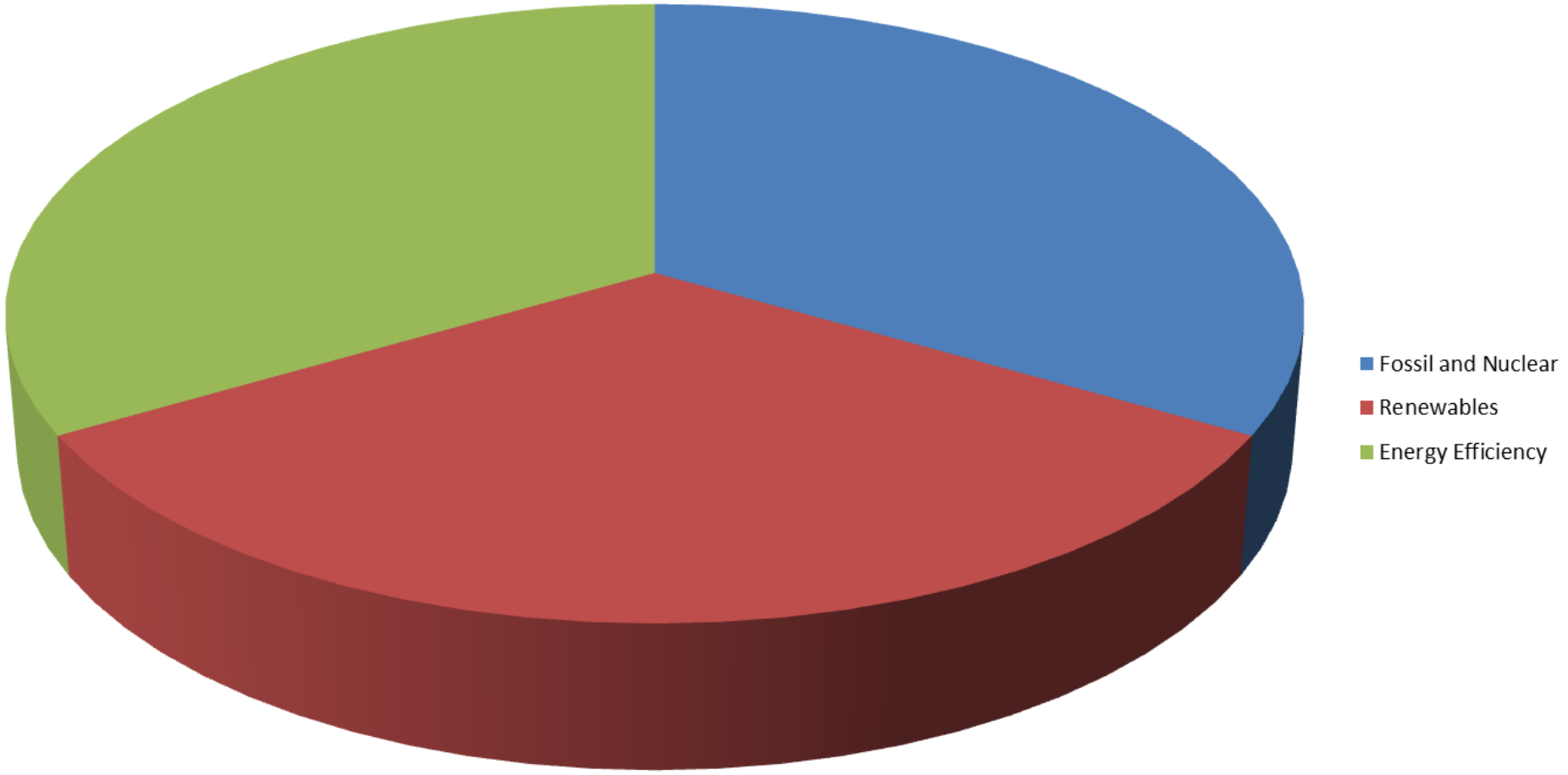
CURRENT SOURCES OF ARKANSAS ELECTRICITY GENERATION





From the *Drivepower Technology Atlas.* Courtesy of E SOURCE, www.esource.com.

TARGET INITIATIVES



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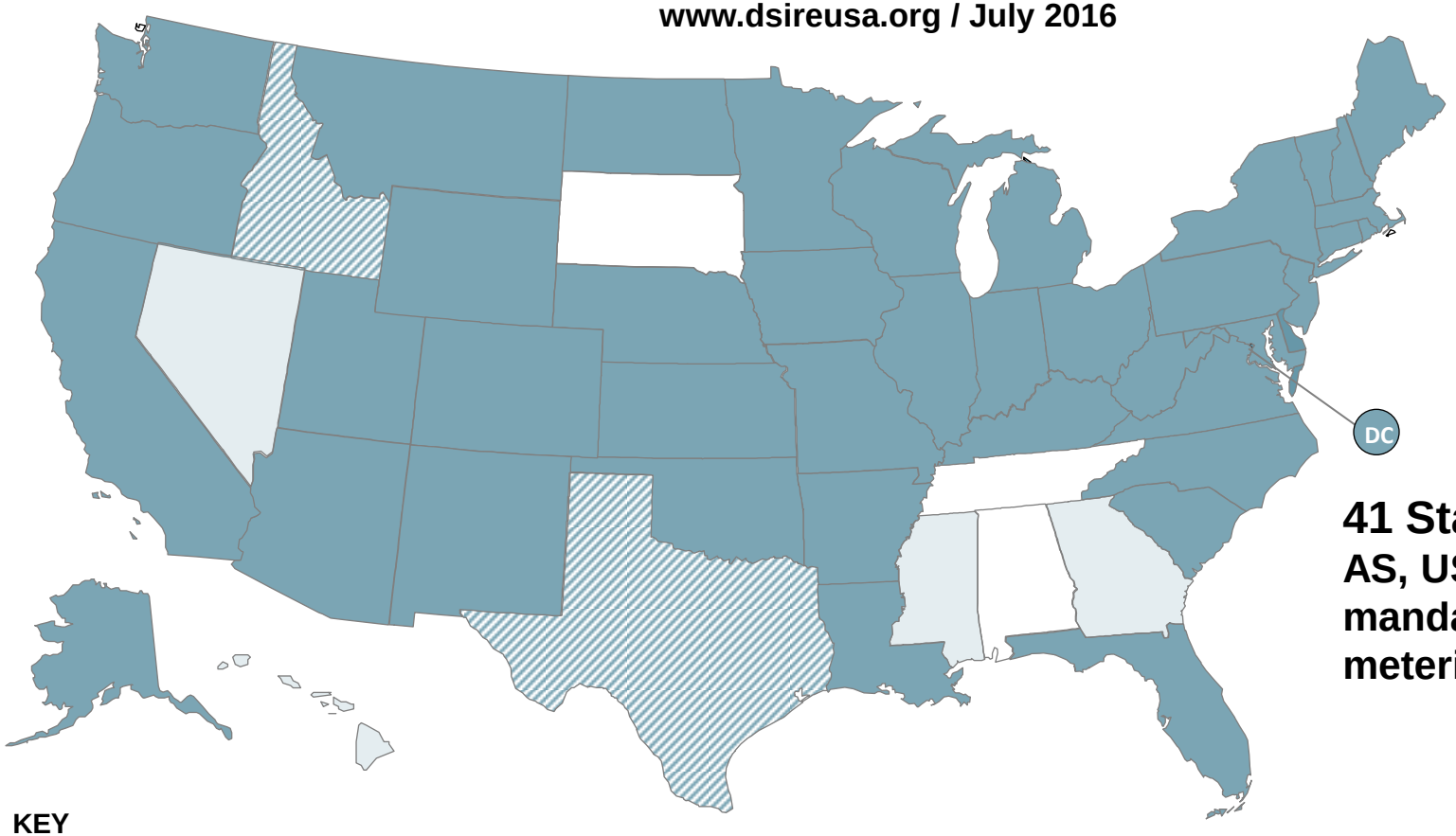
U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Net Metering

www.dsireusa.org / July 2016



41 States + DC, AS, USVI, & PR have mandatory net metering rules

KEY

- State-developed mandatory rules for certain utilities (41 states + DC+ 3 territories)
- No statewide mandatory rules, but some utilities allow net metering (2 states)
- Statewide distributed generation compensation rules other than net metering (4 states + 1 territory)

U.S. Territories:

AS	PR
VI	GU

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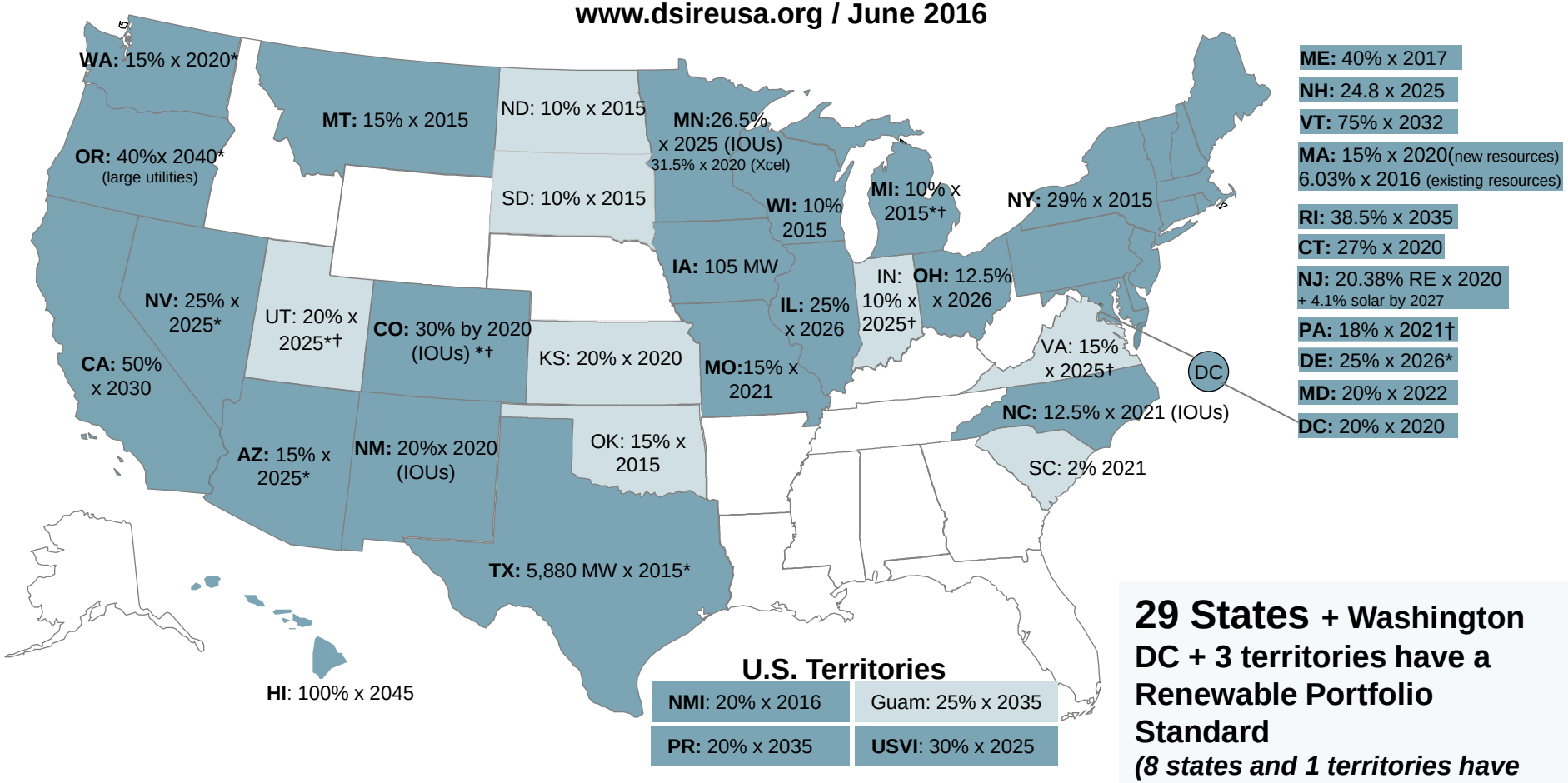
Renewable Portfolio Standard Policies

www.dsireusa.org / June 2016



ME: 40% x 2017
NH: 24.8 x 2025
VT: 75% x 2032
MA: 15% x 2020(new resources) 6.03% x 2016 (existing resources)
RI: 38.5% x 2035
CT: 27% x 2020
NJ: 20.38% RE x 2020 + 4.1% solar by 2027
PA: 18% x 2021†
DE: 25% x 2026*
MD: 20% x 2022
DC: 20% x 2020

U.S. Territories

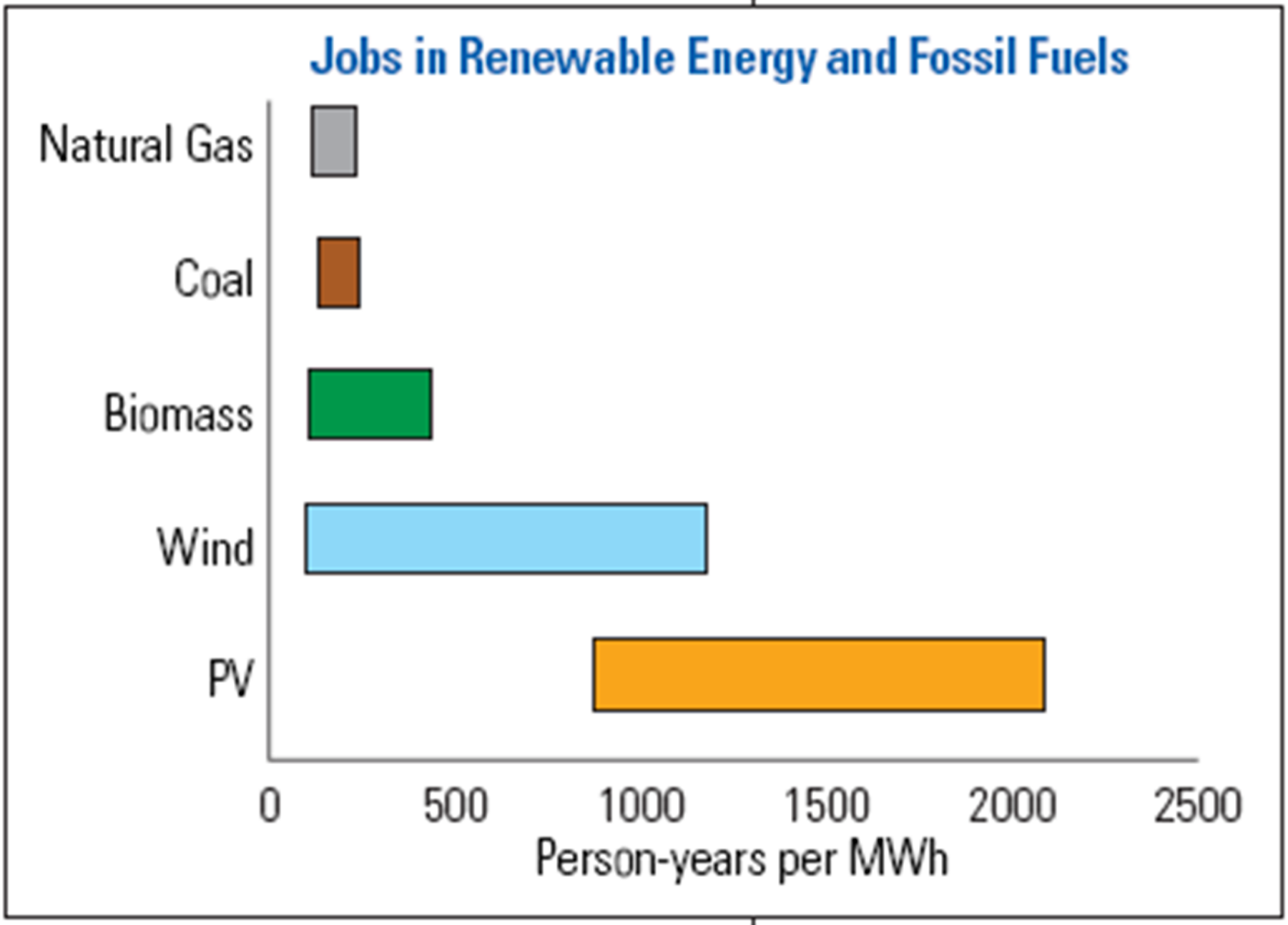
NMI: 20% x 2016	Guam: 25% x 2035
PR: 20% x 2035	**USVI**: 30% x 2025

29 States + Washington DC + 3 territories have a Renewable Portfolio Standard
(8 states and 1 territories have renewable portfolio goals)

Renewable portfolio standard
Renewable portfolio goal

* Extra credit for solar or customer-sited renewables
† Includes non-renewable alternative resources

Source: REPP, GP, EWEA, CalPIRG, BLS

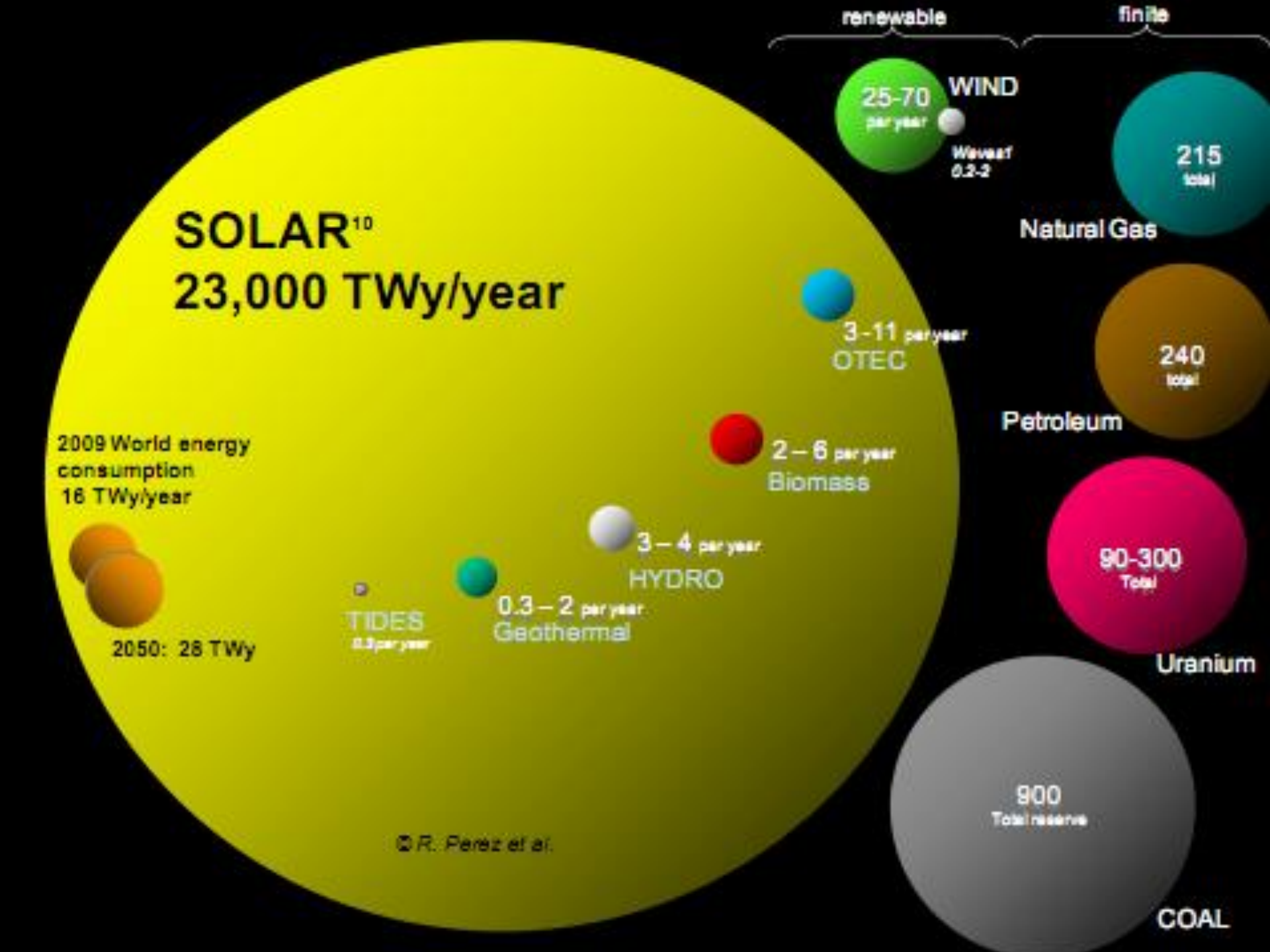


There's plenty of sun to go around

Enough sunlight
strikes Earth
every 104 minutes
to power the entire world
for a year.

The United States has the
space and sunlight
to provide **100 times**
its annual power demand
with **solar**.

Mother Jones


renewable
finite
SOLAR[10]
23,000 TWy/year
25-70
per year
WIND
Wavesf
0.2-2
215
total
Natural Gas
3-11 per year
OTEC
240
total
Petroleum
2009 World energy
consumption
16 TWy/year
2 – 6 per year
Biomass
3 – 4 per year
HYDRO
90-300
Total
Uranium
2050: 28 TWy
TIDES
0.3 per year
0.3 – 2 per year
Geothermal
900
Total reserve
COAL
© R. Perez et al.

Total Installed Operating Generating Capacity

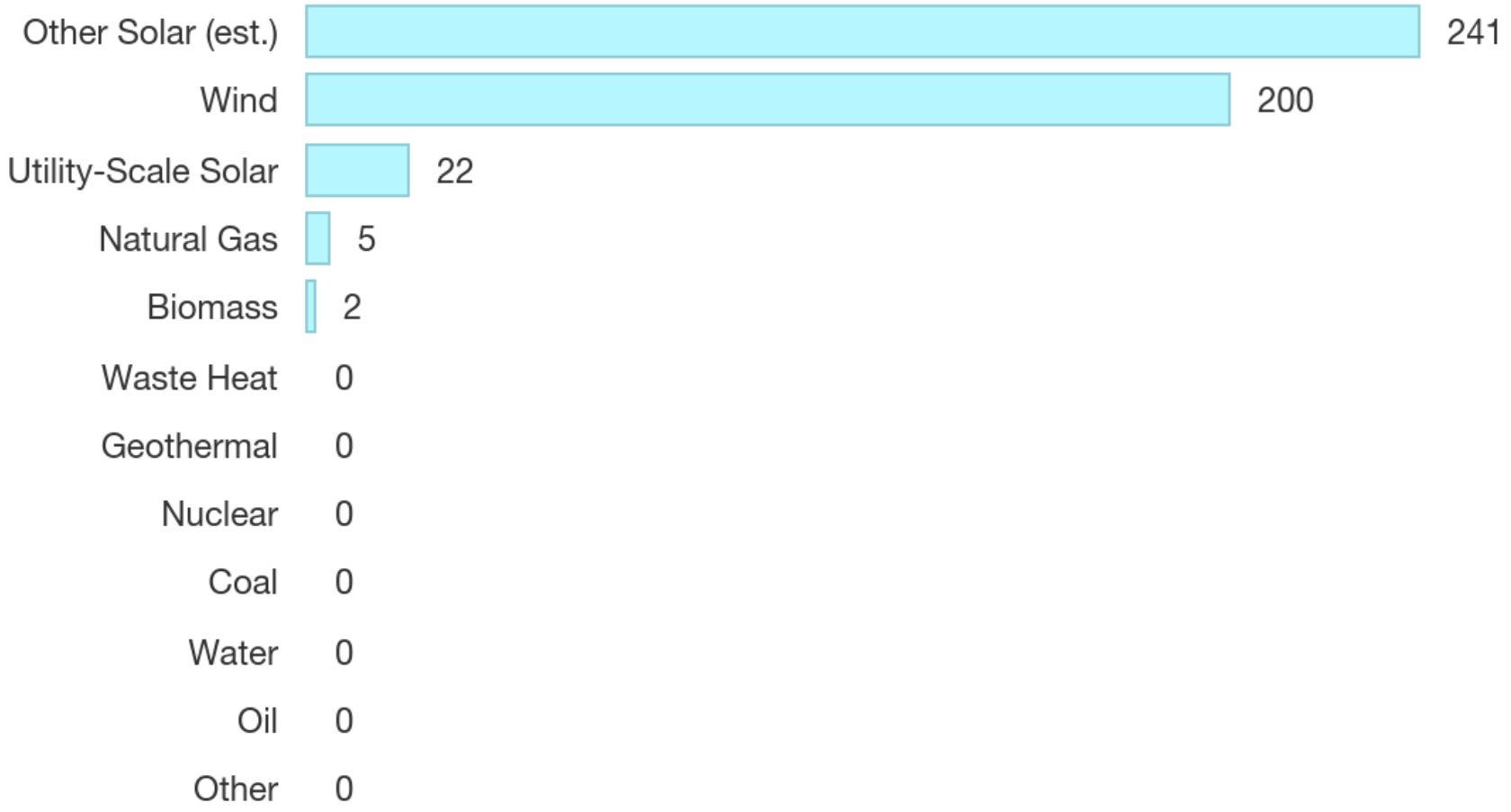
	Installed Capacity (GW)	% of Total Capacity
Coal	333.73	28.82%
Natural Gas	486.41	42.00%
Nuclear	106.78	9.22%
Oil	47.00	4.06%
Water	96.12	8.30%
Wind	60.29	5.21%
Biomass	15.33	1.32%
Geothermal Steam	3.79	0.33%
Solar	6.79	0.59%
Waste Heat	1.13	0.10%
Other	0.80	0.07%
Total	1,158.17	100.00%

Source: Data derived from Ventyx Global LLC, Velocity Suite.

New US Electricity Generation Capacity (Jan-Nov 2015)

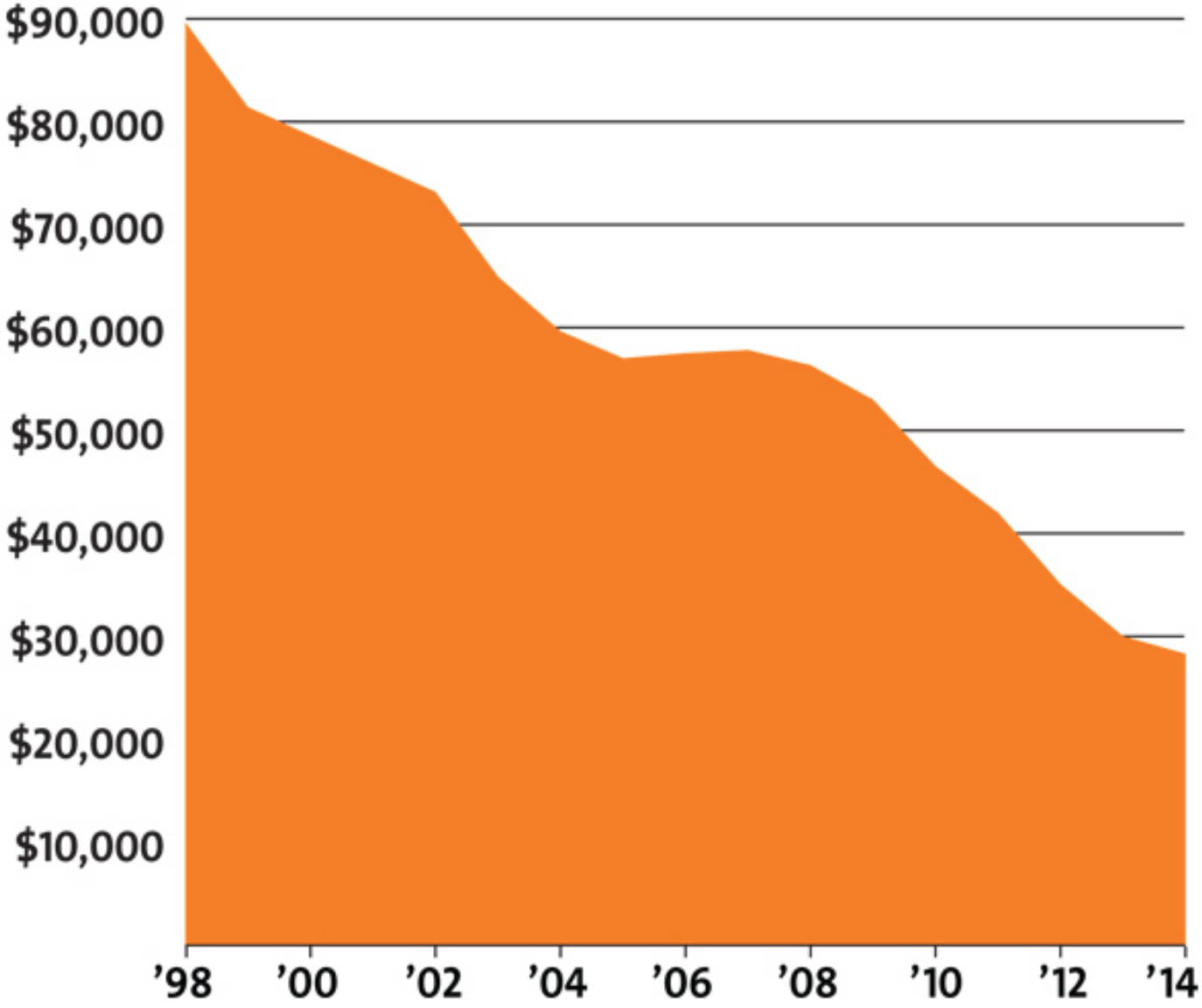
"Other Solar" is estimated based on very educated 2015 projections from top solar market researchers and a bit of math and assumptions from CleanTechnica director Zachary Shahan.

November Capacity Added (MWac) | 2015 YTD Capacity Added (MWac) | Total Capacity (GWac)



Source: CleanTechnica

The cost of putting solar panels on typical house has dropped nearly 70% since 1998

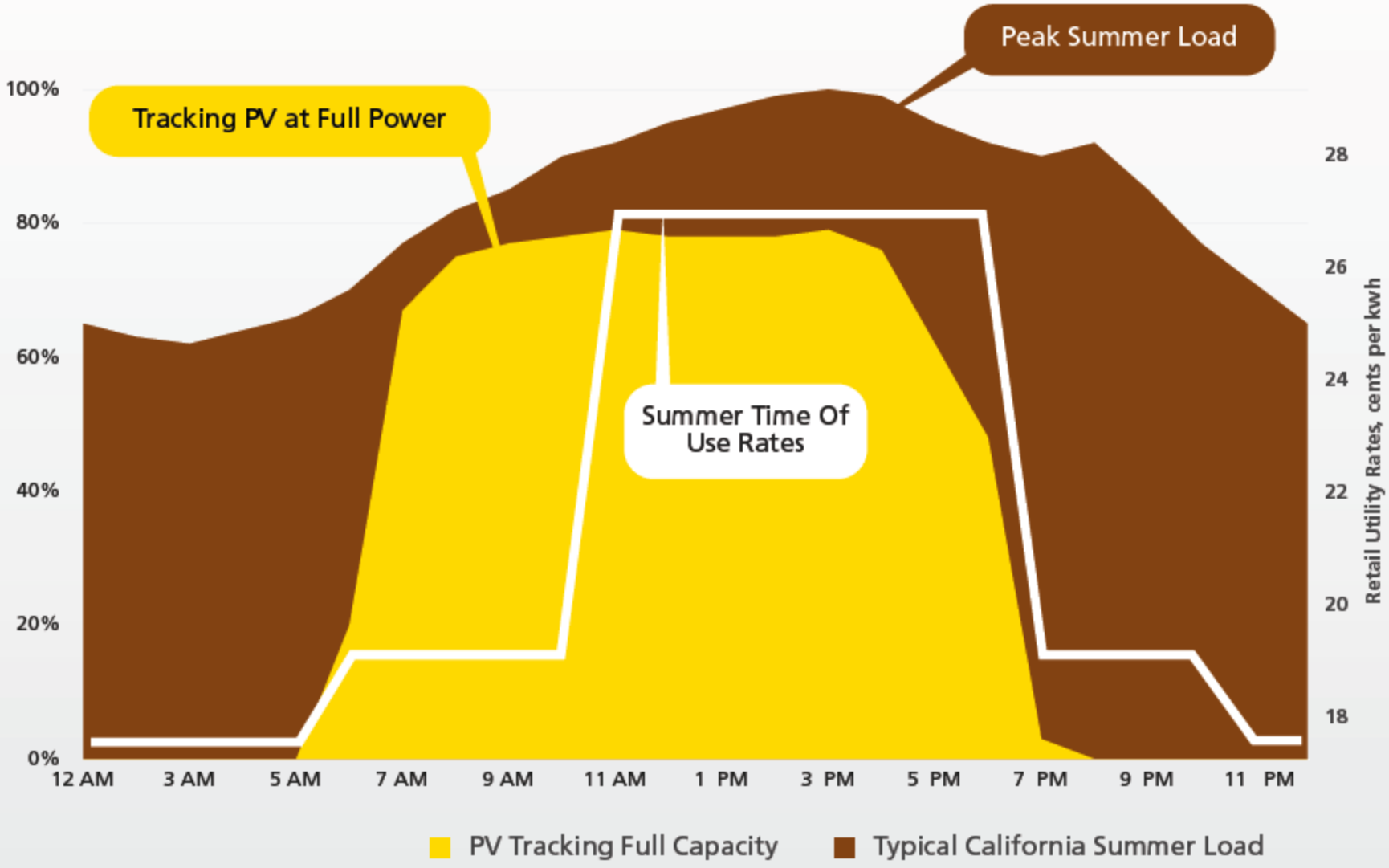


Assumes 6kw house. Source: National Renewable Energy Laboratory

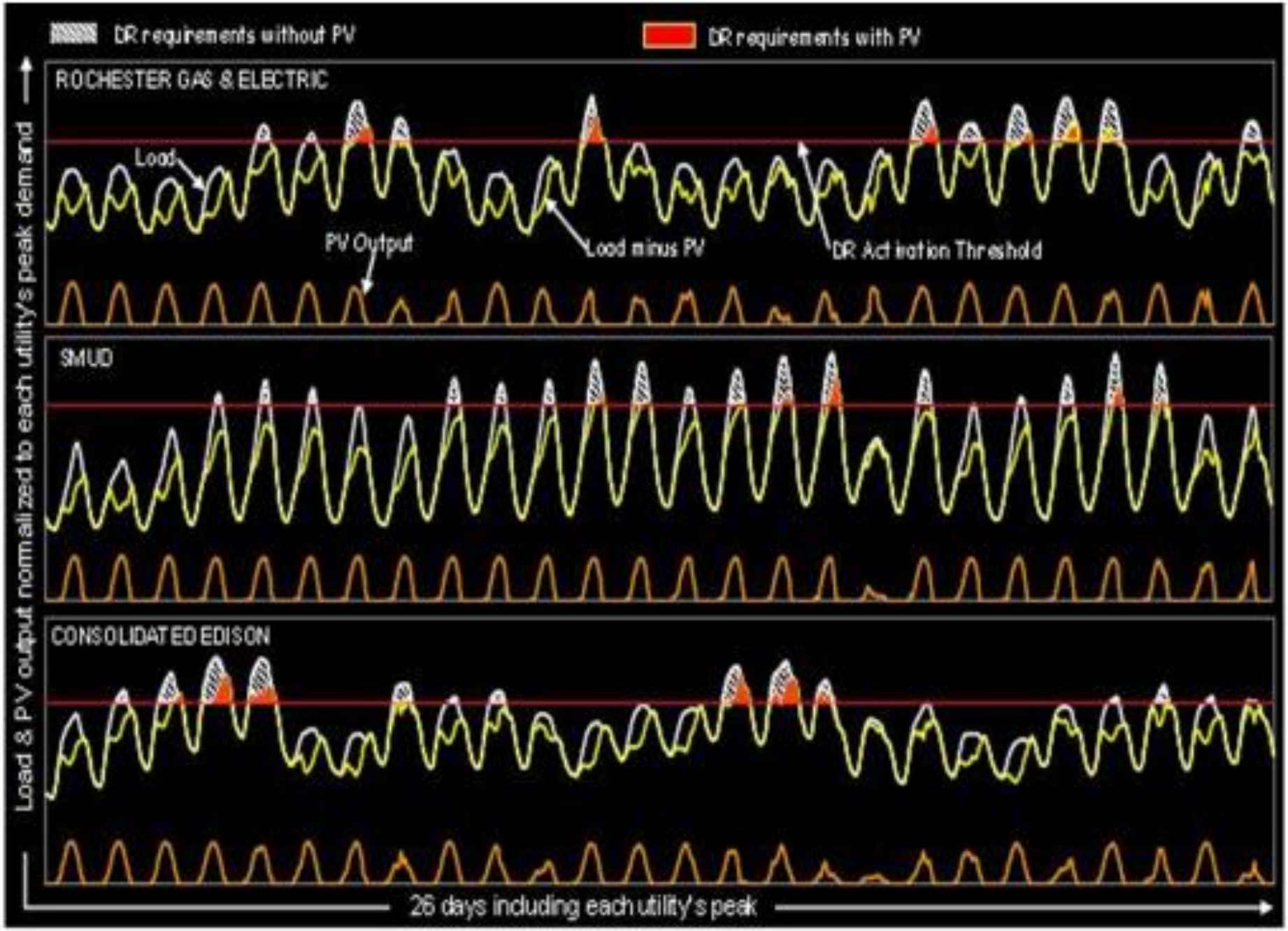
Mother Jones

(from the Clean Power Research analysis of the value of solar)

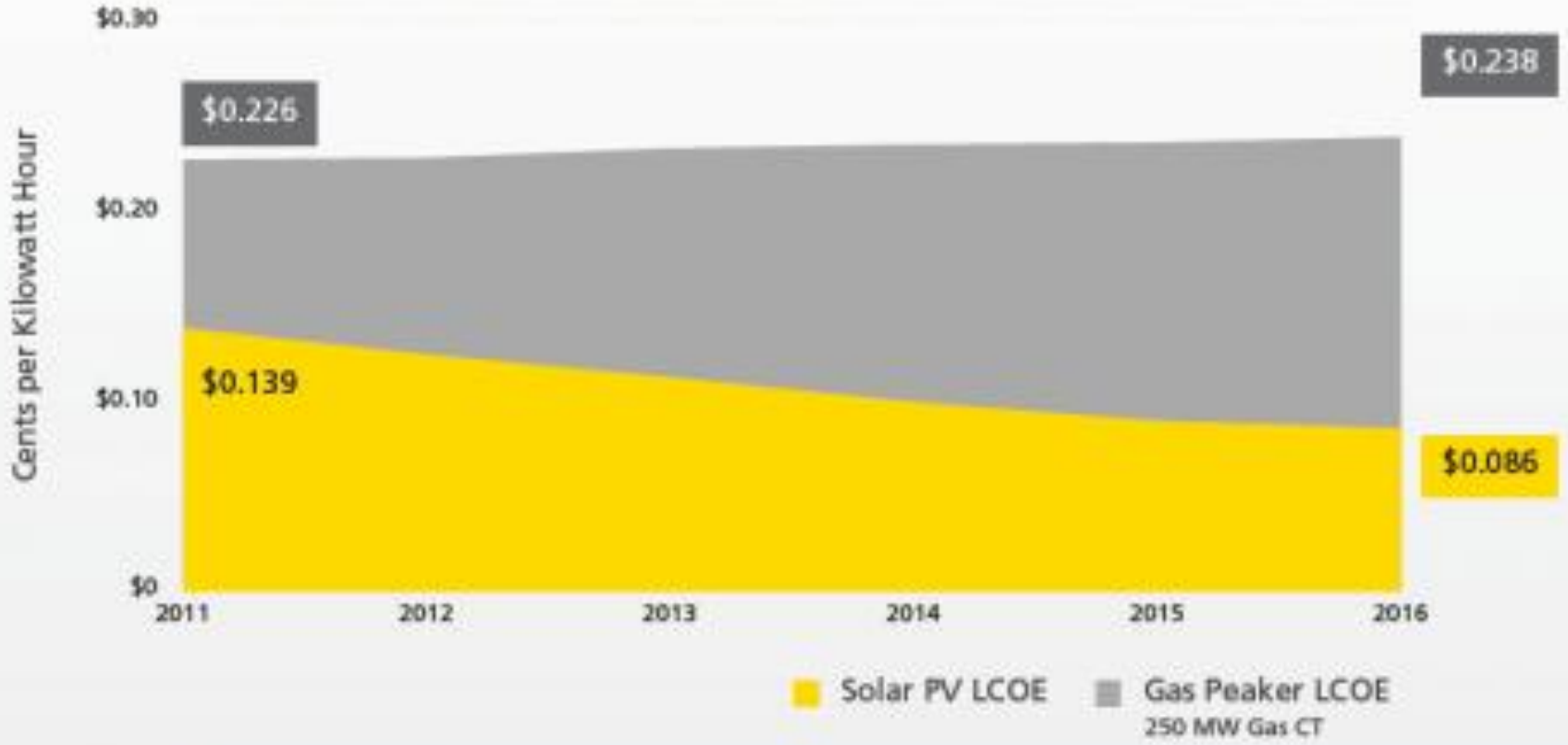
Solar Meets Critical Peak Power Demand



Sources: For summer peak load shape – California Independent System Operator (CAL-ISO); For time of use rates – Pacific Gas and Electric Company (PG&E); For PV Tracking Output – Solaria Corporation

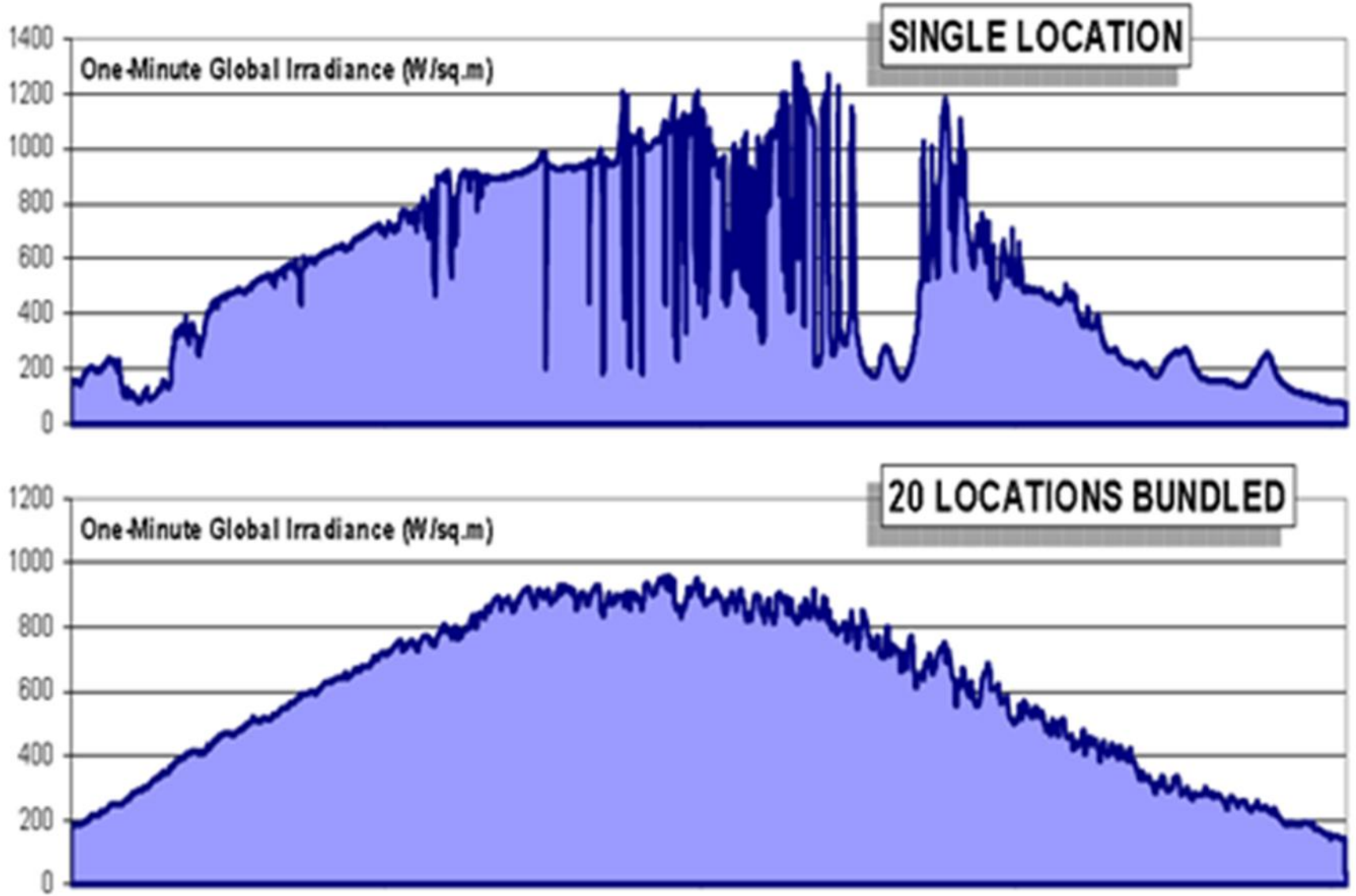

DR requirements without PV
DR requirements with PV
ROCHESTER GAS & ELECTRIC
Load
PV Output
Load minus PV
DR Activation Threshold
SMUD
CONSOLIDATED EDISON
Load & PV output normalized to each utility's peak demand
26 days including each utility's peak

Solar Beats Natural Gas Peak Power Today



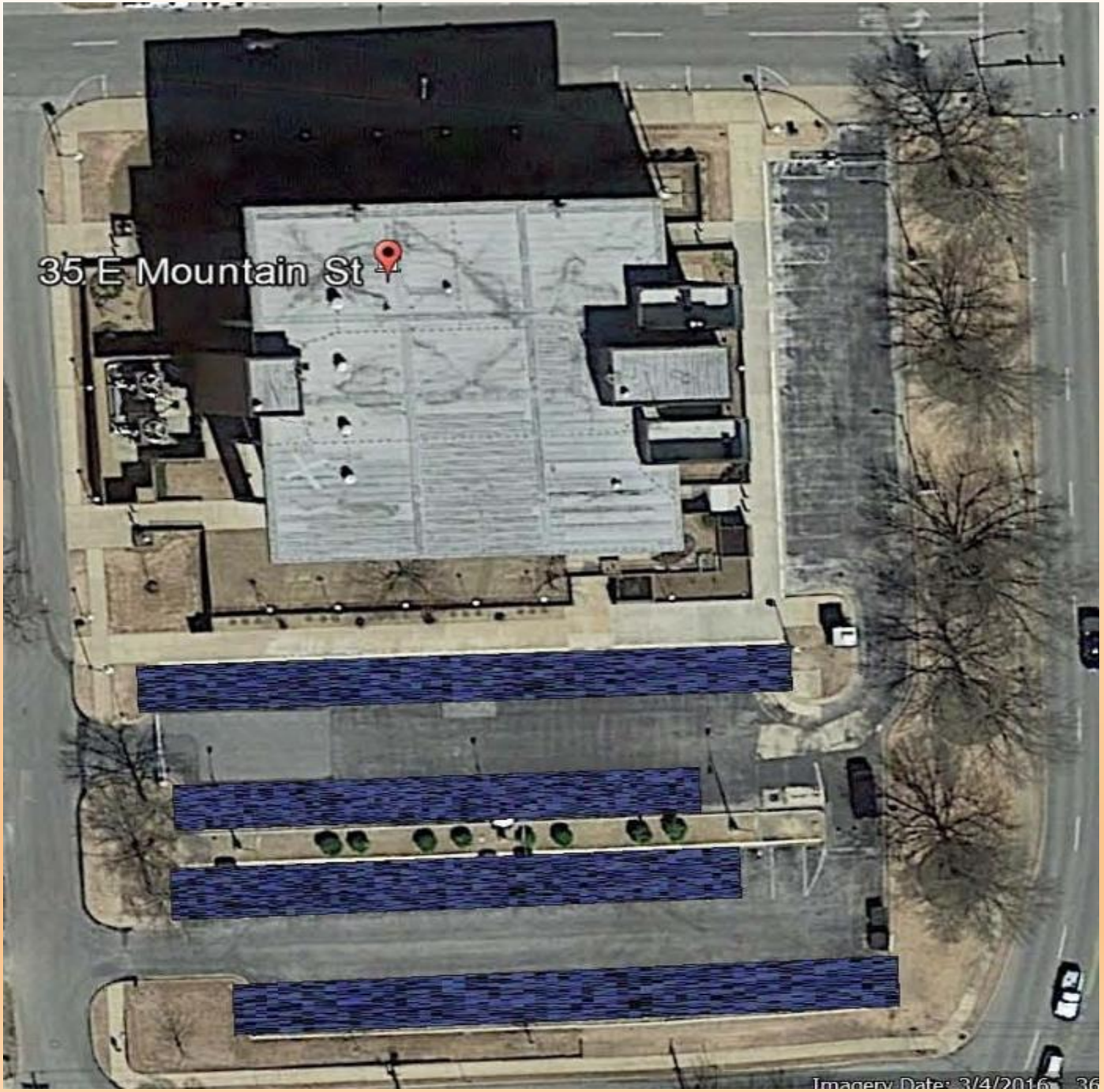
Gas peakers pollute 3 times more than natural gas power plants.

Sources: 2011 gas price is the mid-point of the LCOE range given by Lazard, version 5.0. 2016 gas price is illustrative, calculated assuming 1% annual escalation; 2011 & 2016 PV Prices from DOE, Advanced Research Projects Agency - Energy, $1/Watt Photovoltaic Systems, May 2011 (further validated by prices bid by solar developers into the California market).


SINGLE LOCATION
One-Minute Global Irradiance (W/sq.m)
1400
1200
1000
800
600
400
200
0
20 LOCATIONS BUNDLED
One-Minute Global Irradiance (W/sq.m)
1200
1000
800
600
400
200
0

	Developer/Investor	Utility/Ratepayer	Society/Taxpayer
Distributed solar* system Cost	20-30 ¢/kWh		
Transmission Energy Value		6 to 11 ¢/kWh	
Transmission Capacity Value		0 to 5 ¢/kWh	
Distribution Energy Value		0 to 1 ¢/kWh	
Distribution Capacity Value		0 to 3 ¢/kWh	
Fuel Price Mitigation		3 to 5 ¢/kWh	
Solar Penetration Cost		0 to 5 ¢/kWh	
Grid Security Enhancement Value			2 to 3 ¢/kWh
Environment/health Value			3 to 6 ¢/kWh
Long-term Societal Value			3 to 4 ¢/kWh
Economic Growth Value			3+ ¢/kWh
TOTAL COST / VALUE	20-30 ¢/kWh	15 to 41 ¢/kWh	

** Centralized solar has achievd a cost of 15-20 cents per kWh today. However less of the above value items would apply. The distribution value items would not apply. Transmission capacity, and grid security items would generally be towards the bottom of the above ranges, while penetration cost would be towards the top of the ranges because of the burden placed on transmission and the possible need for new transmission lines -- nevertheless, a value of 14-30 cents per kWh could be claimed.*


35 E Mountain St
Imagery Date: 3/4/2016

THE TRIPLE BOTTOM LINE