

Solar PV

An Overview for Georgia

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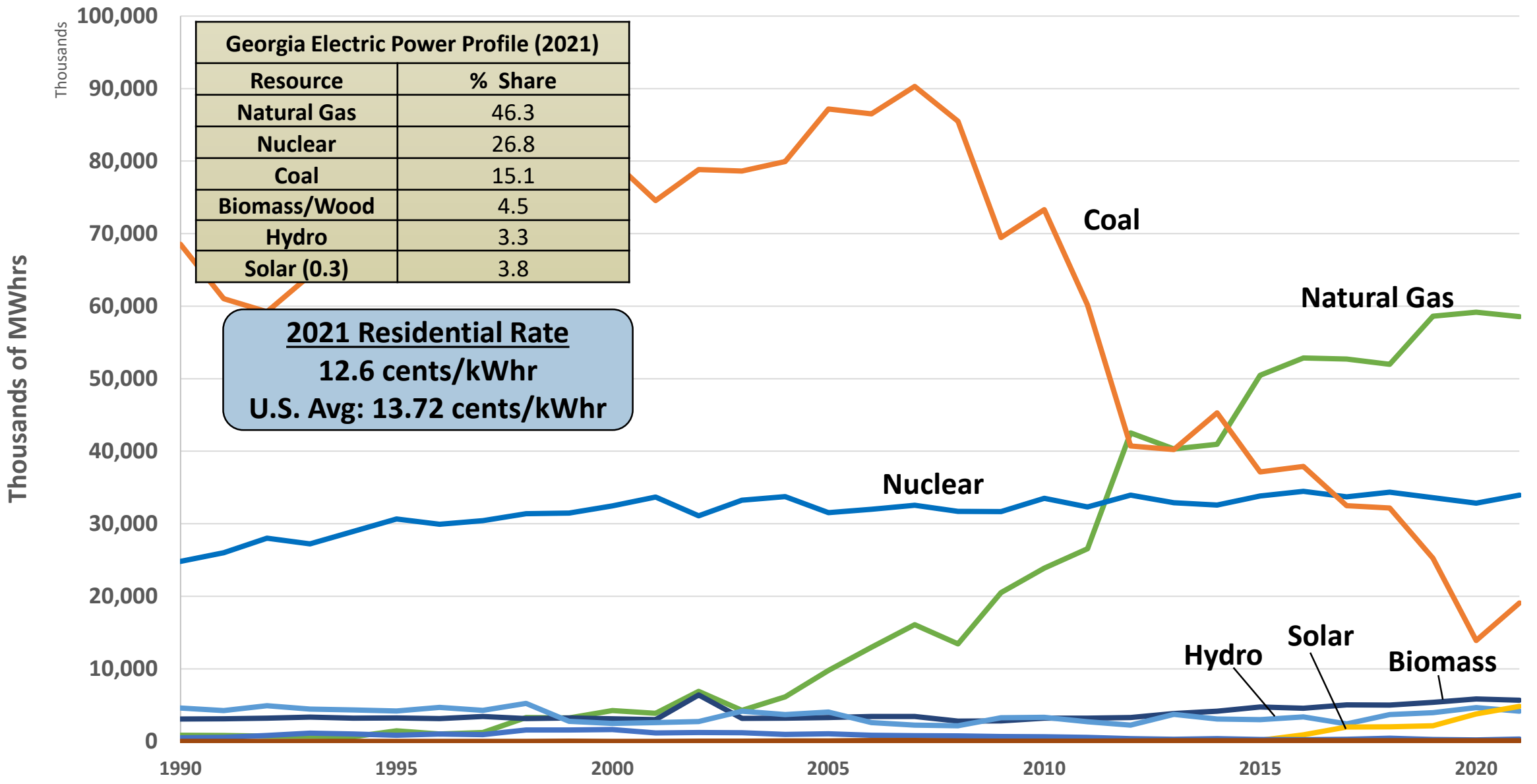
COLLEGE OF ENGINEERING AND CENTER FOR INTERNATIONAL TRADE AND SECURITY

GEORGIA RURAL DEVELOPMENT COUNCIL

OCTOBER 24, 2022

GA Electric Power Industry (Regulated)

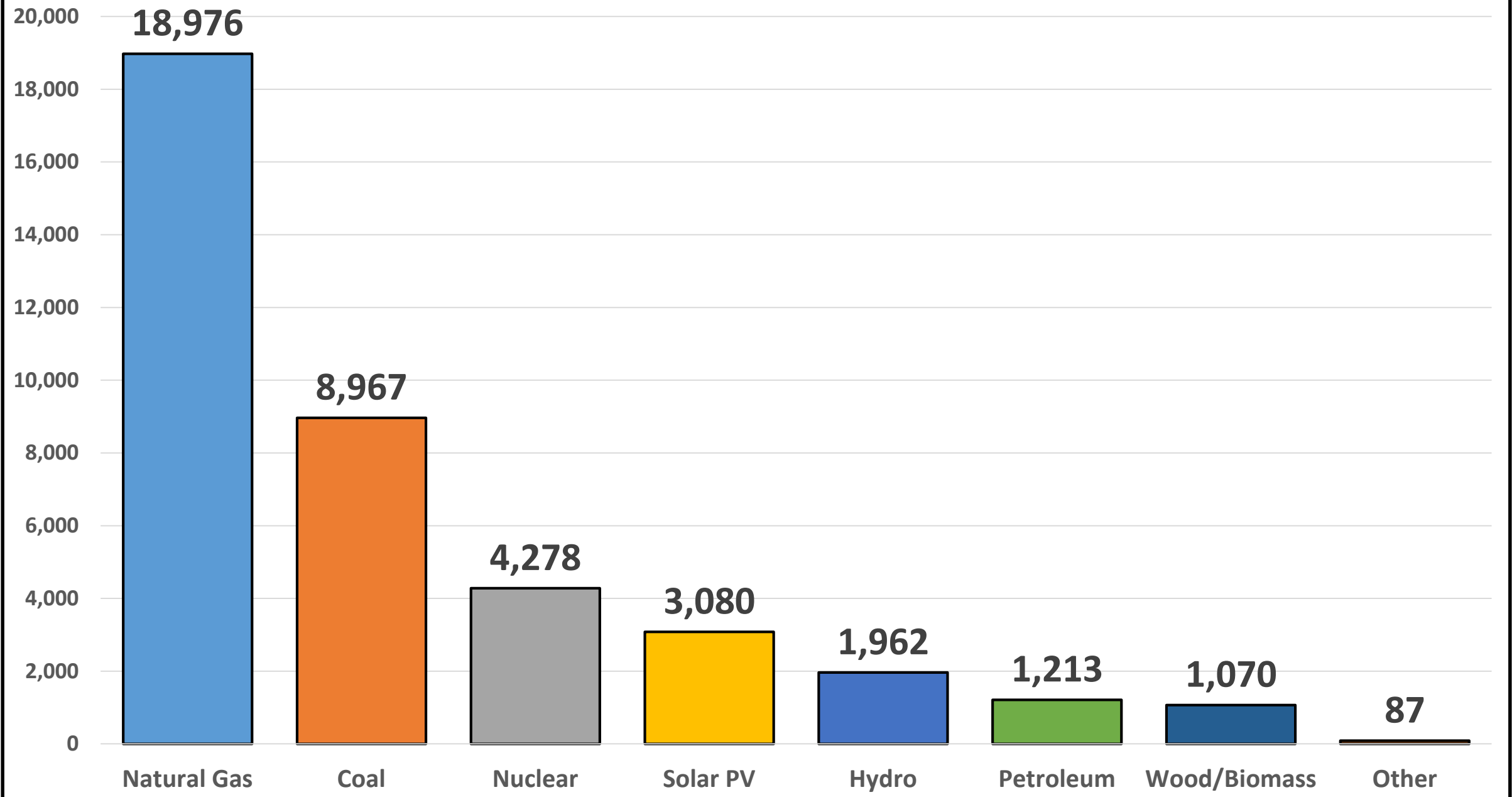
— Natural Gas
 — Nuclear
 — Coal
 — Biomass/Wood
 — Hydro
 — Solar
 — Petroleum
 — Other



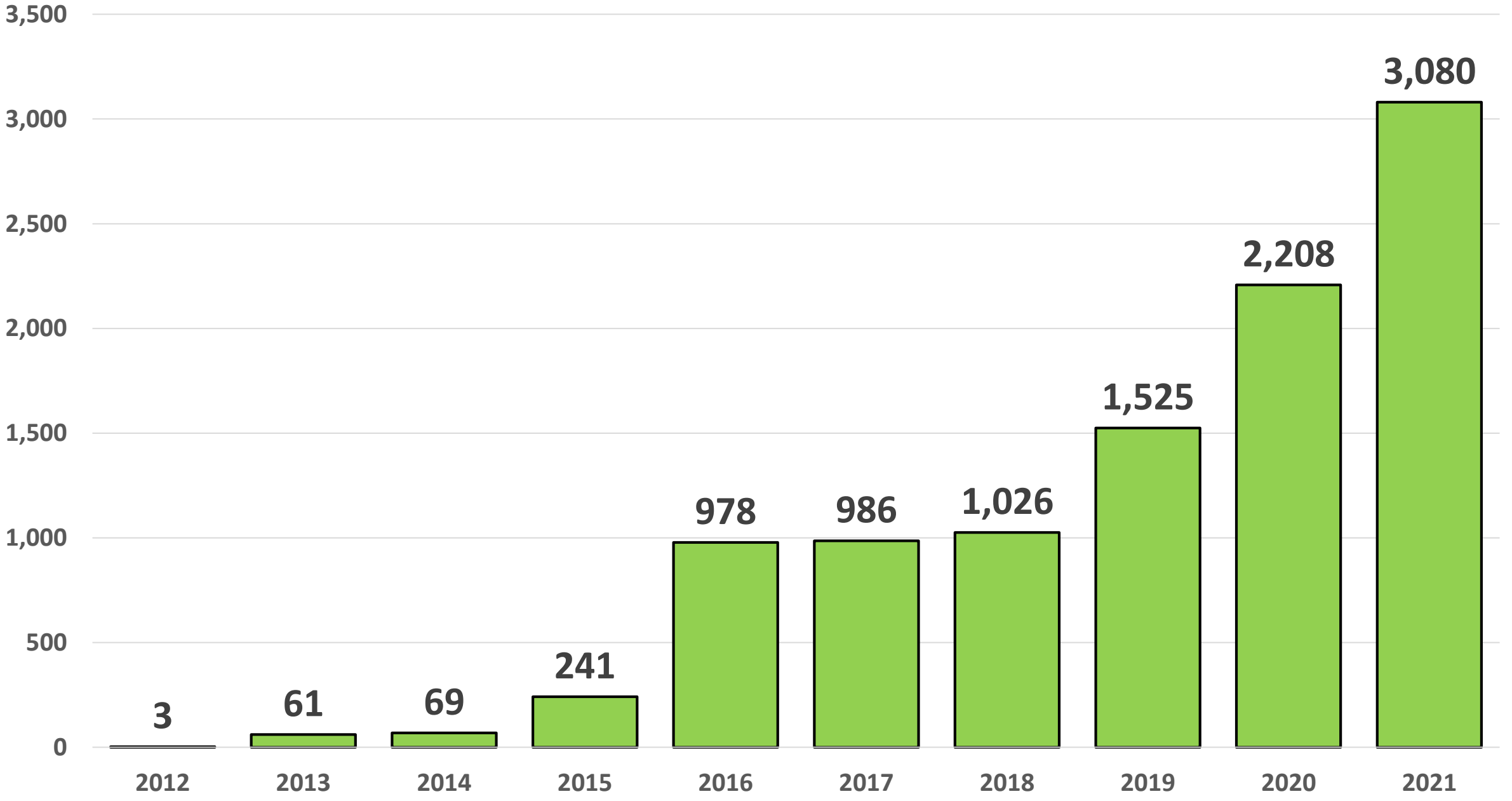
Georgia Electric Power Profile (2021)	
Resource	% Share
Natural Gas	46.3
Nuclear	26.8
Coal	15.1
Biomass/Wood	4.5
Hydro	3.3
Solar (0.3)	3.8

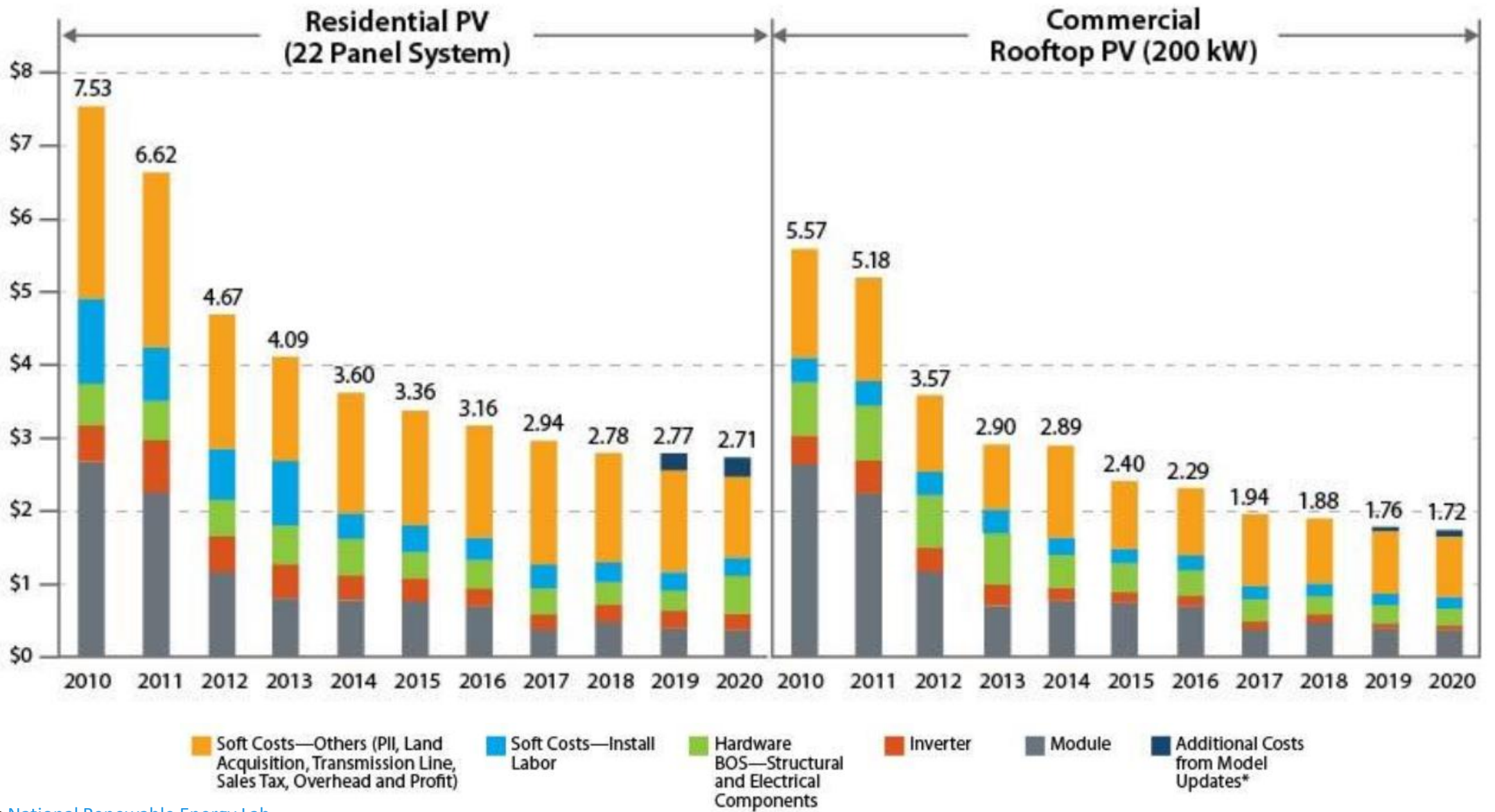
2021 Residential Rate
 12.6 cents/kWhr
 U.S. Avg: 13.72 cents/kWhr

2021 Georgia Electric Power Capacity (MW)

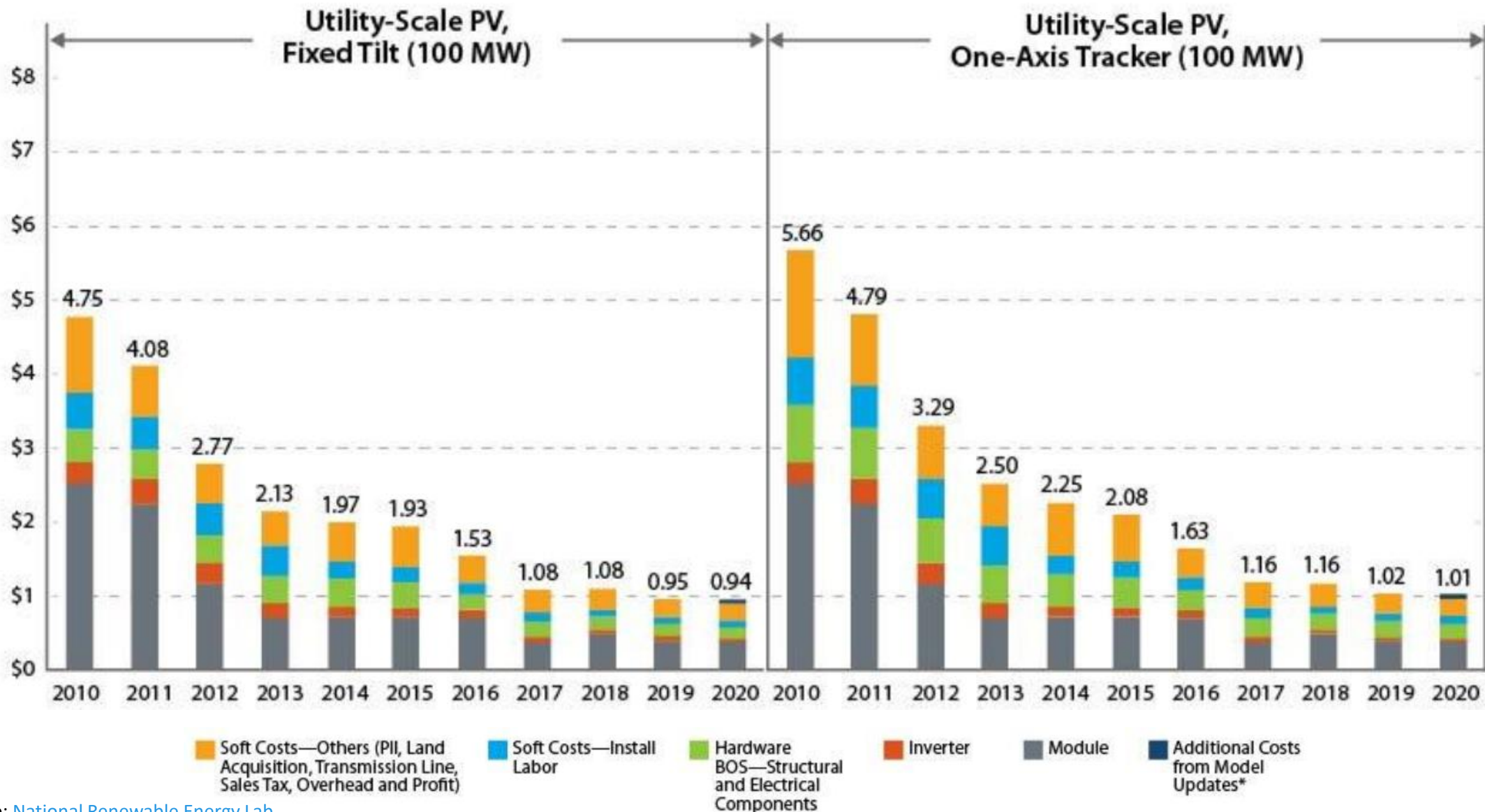


Georgia Solar Capacity Growth (MW)





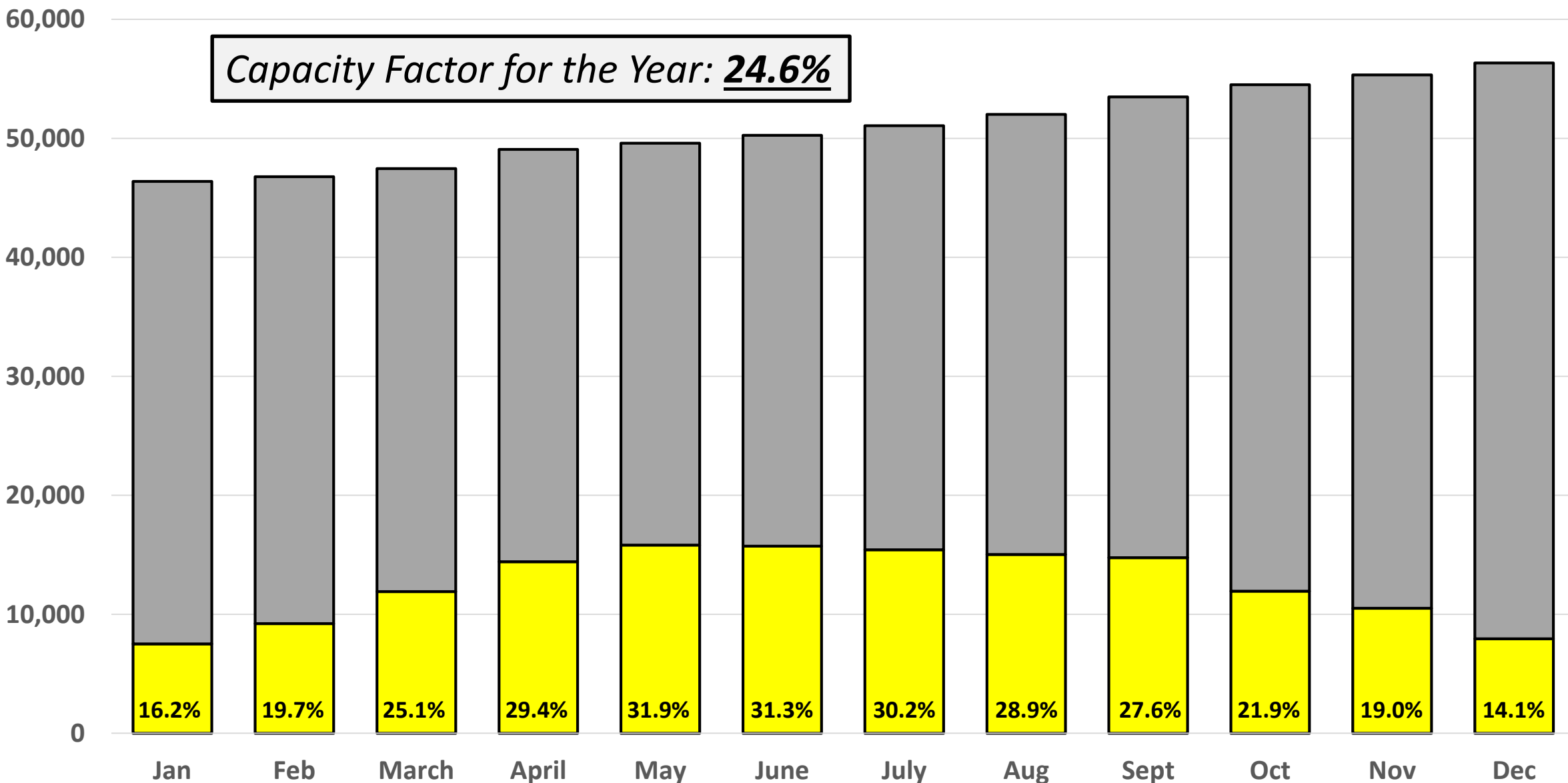
Source: [National Renewable Energy Lab](https://www.nrel.gov/energy-efficiency/energy-modeling/)



Source: [National Renewable Energy Lab](#)

2021 U.S. Utility-Scale Solar PV (MW)

Actual Stranded

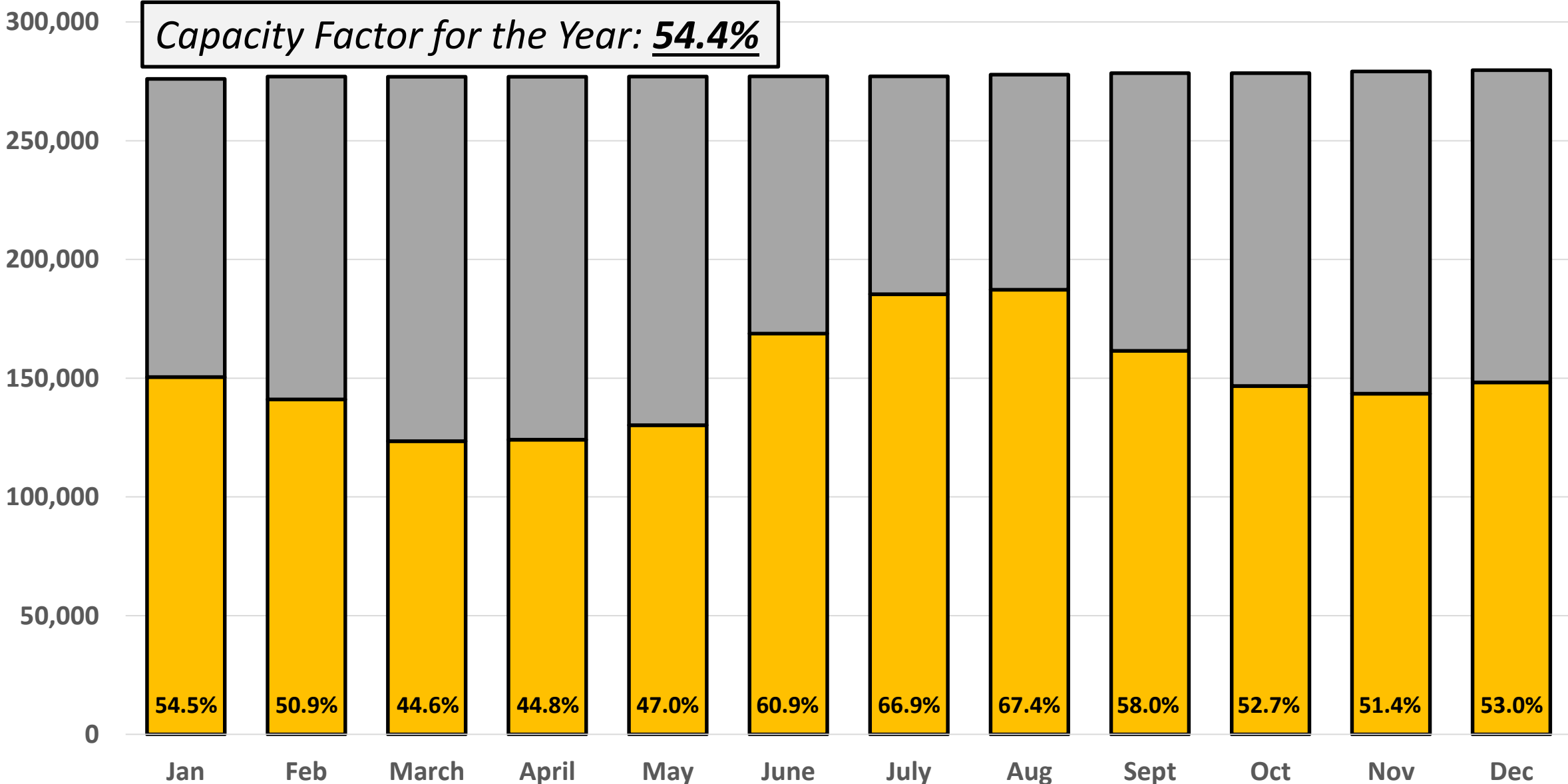


*Capacity Factor for the Year: **24.6%***

2021 U.S. Natural Gas Combined Cycle (MW)

Actual Stranded

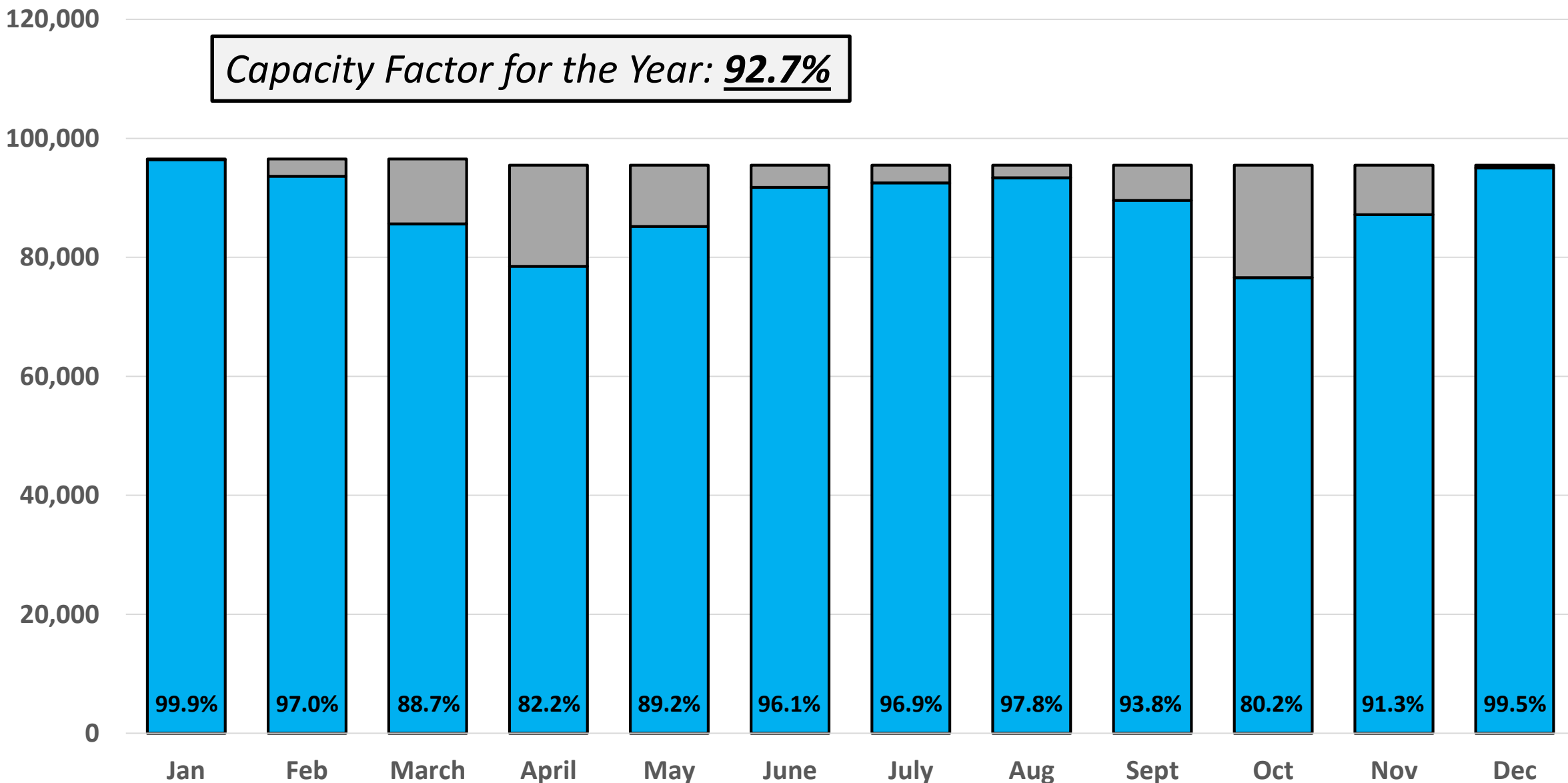
Capacity Factor for the Year: **54.4%**



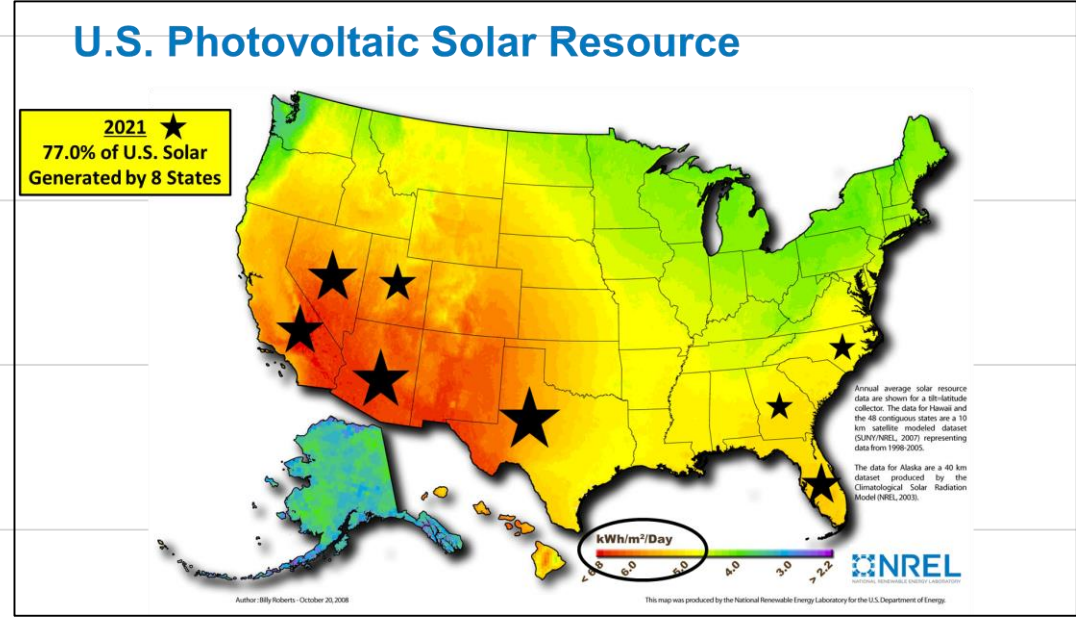
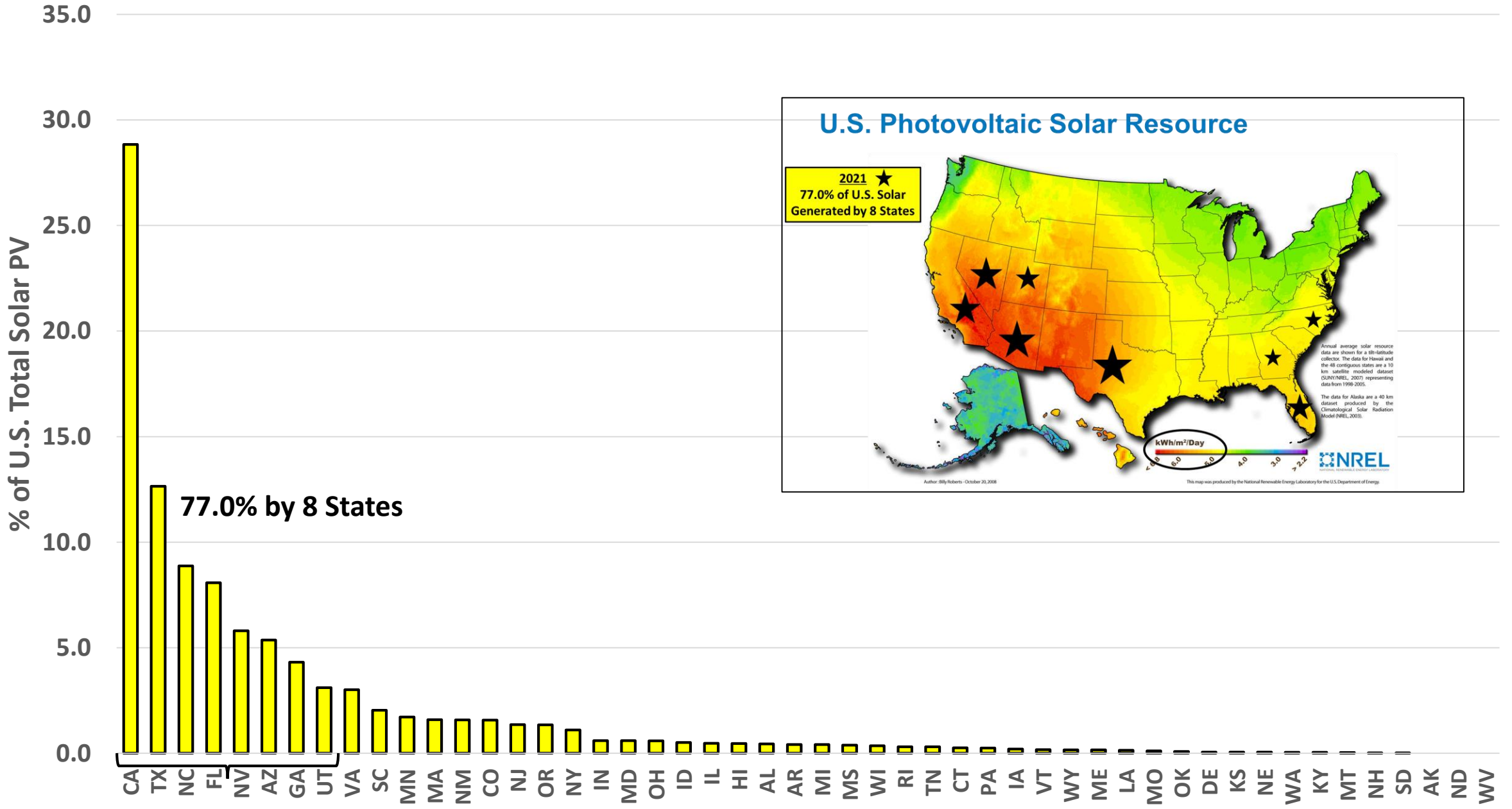
2021 U.S. Nuclear (MW)

Actual Stranded

*Capacity Factor for the Year: **92.7%***

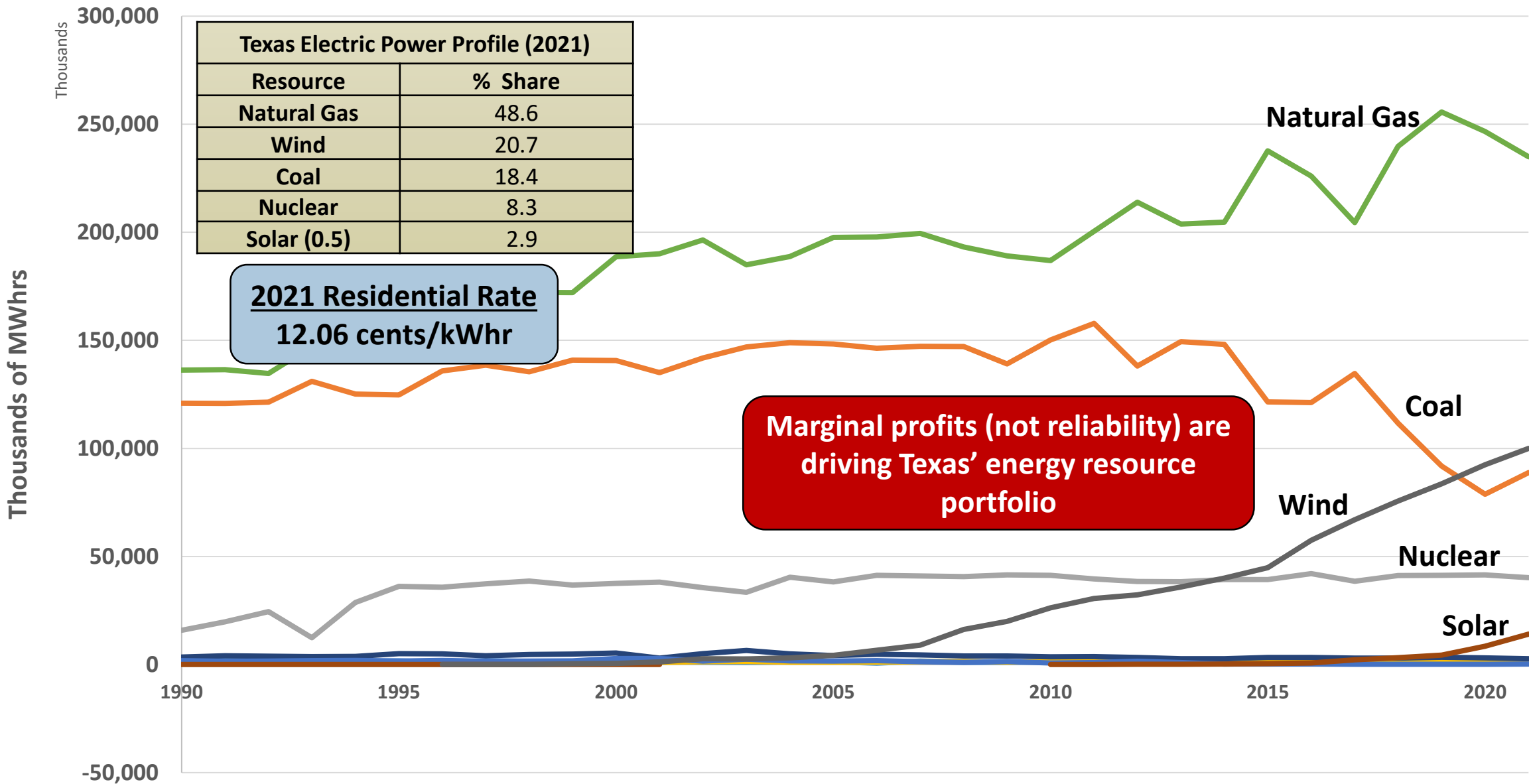


2021 Utility-Scale Solar PV Generation: % Share by State



Texas Generation (Deregulated)

Coal Hydro Natural Gas Nuclear Biomass/Wood Other Petroleum Solar Wind

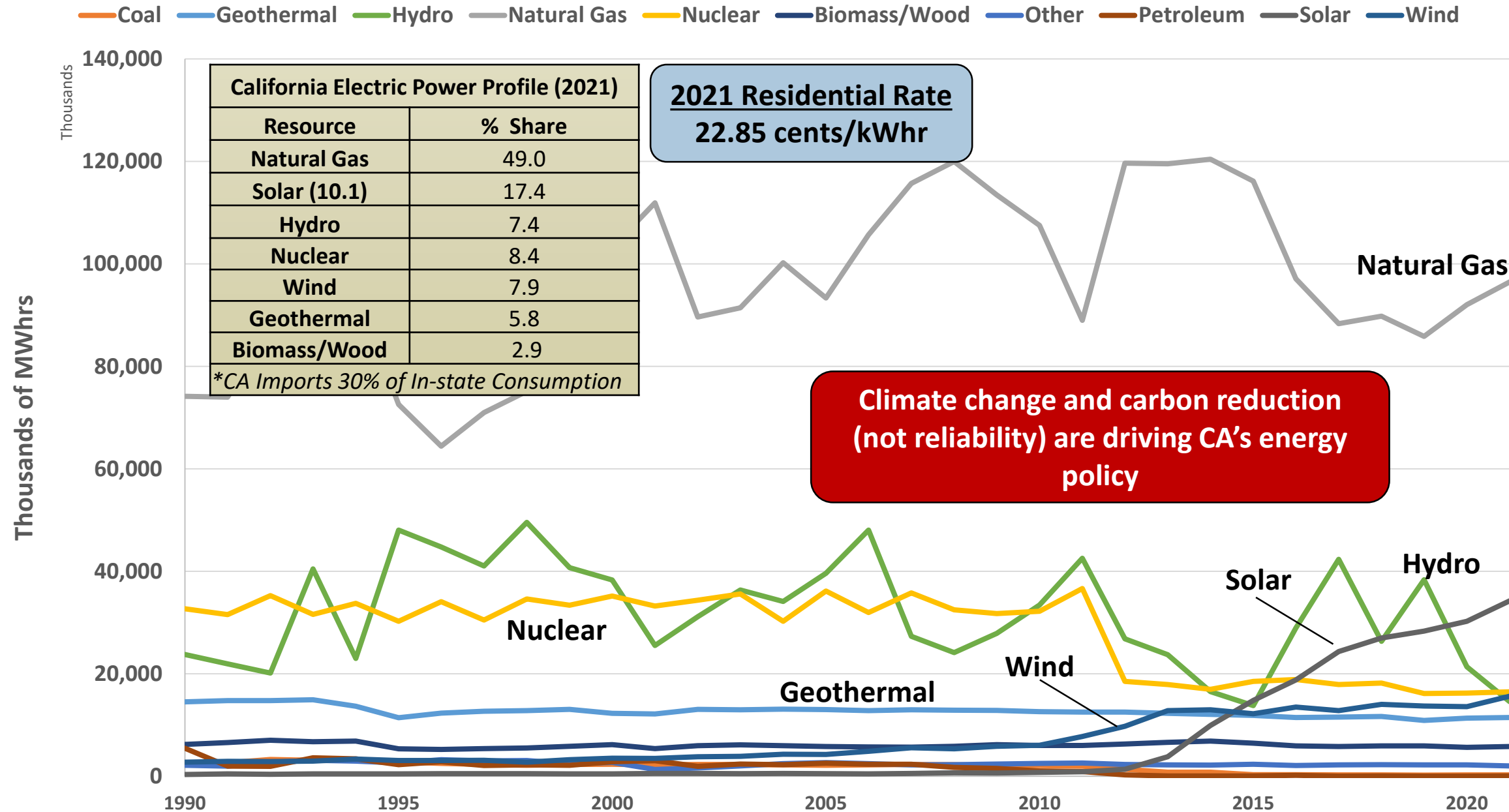


2021 Residential Rate
12.06 cents/kWhr

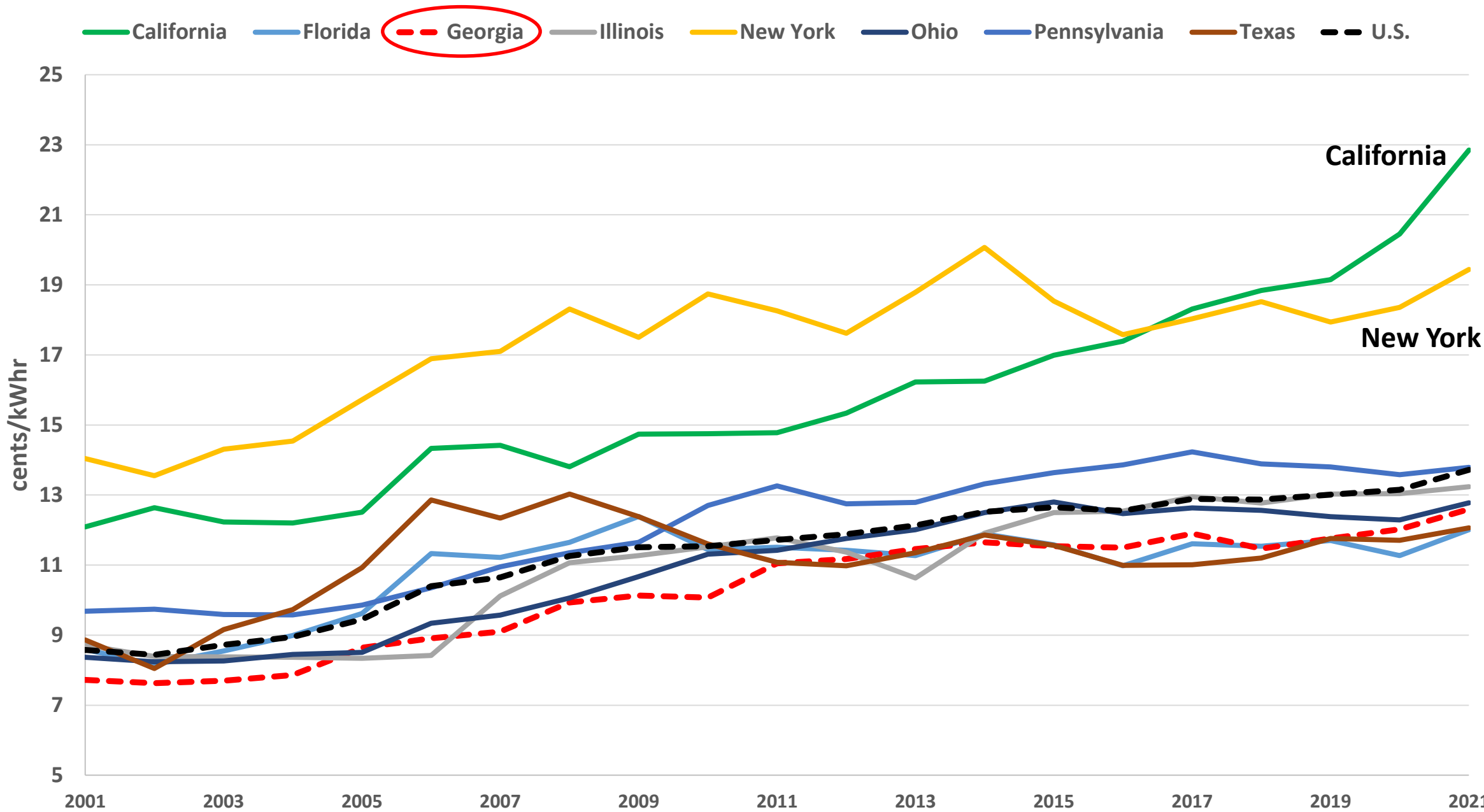
Marginal profits (not reliability) are driving Texas' energy resource portfolio

Texas Electric Power Profile (2021)	
Resource	% Share
Natural Gas	48.6
Wind	20.7
Coal	18.4
Nuclear	8.3
Solar (0.5)	2.9

California Generation (Deregulated)



Residential Electricity Rates: Top 8 GDPs

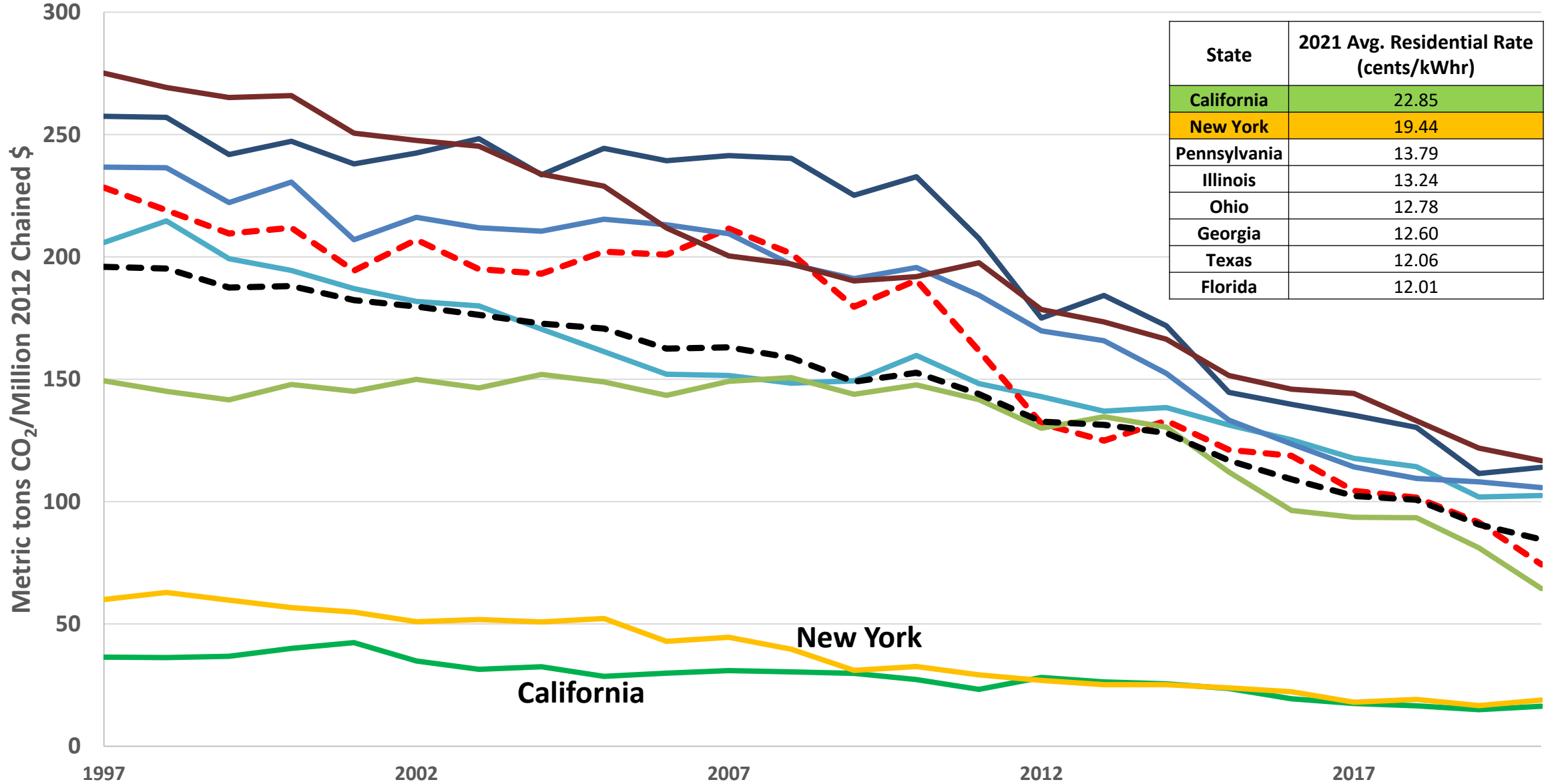


Data Sources:

U.S. EIA; U.S. Bureau Economic Analysis

Electric Power Sector: CO₂ Intensity (GDP Basis)

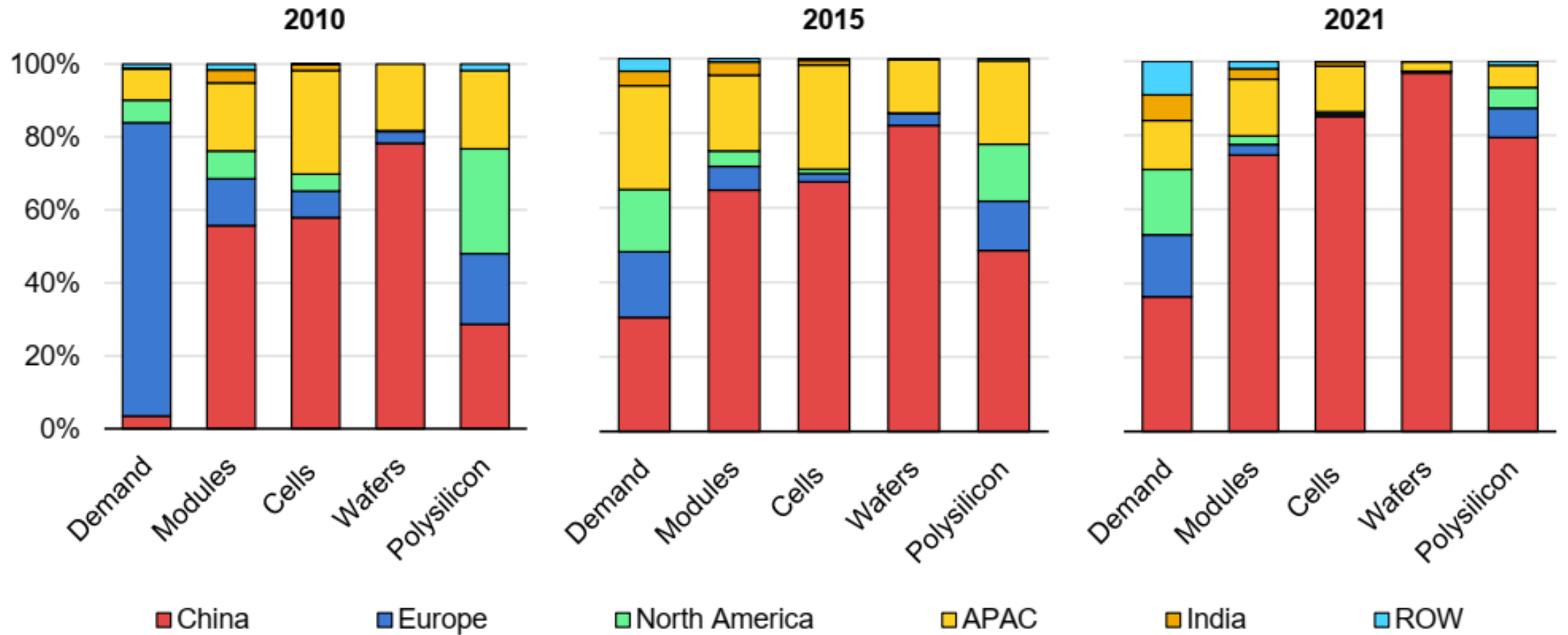
— California
 — Florida
 - - Georgia
— Illinois
 — New York
 — Ohio
 — Pennsylvania
 — Texas
 - - U.S.



California

New York

Solar PV manufacturing capacity by country and region, 2010-2021



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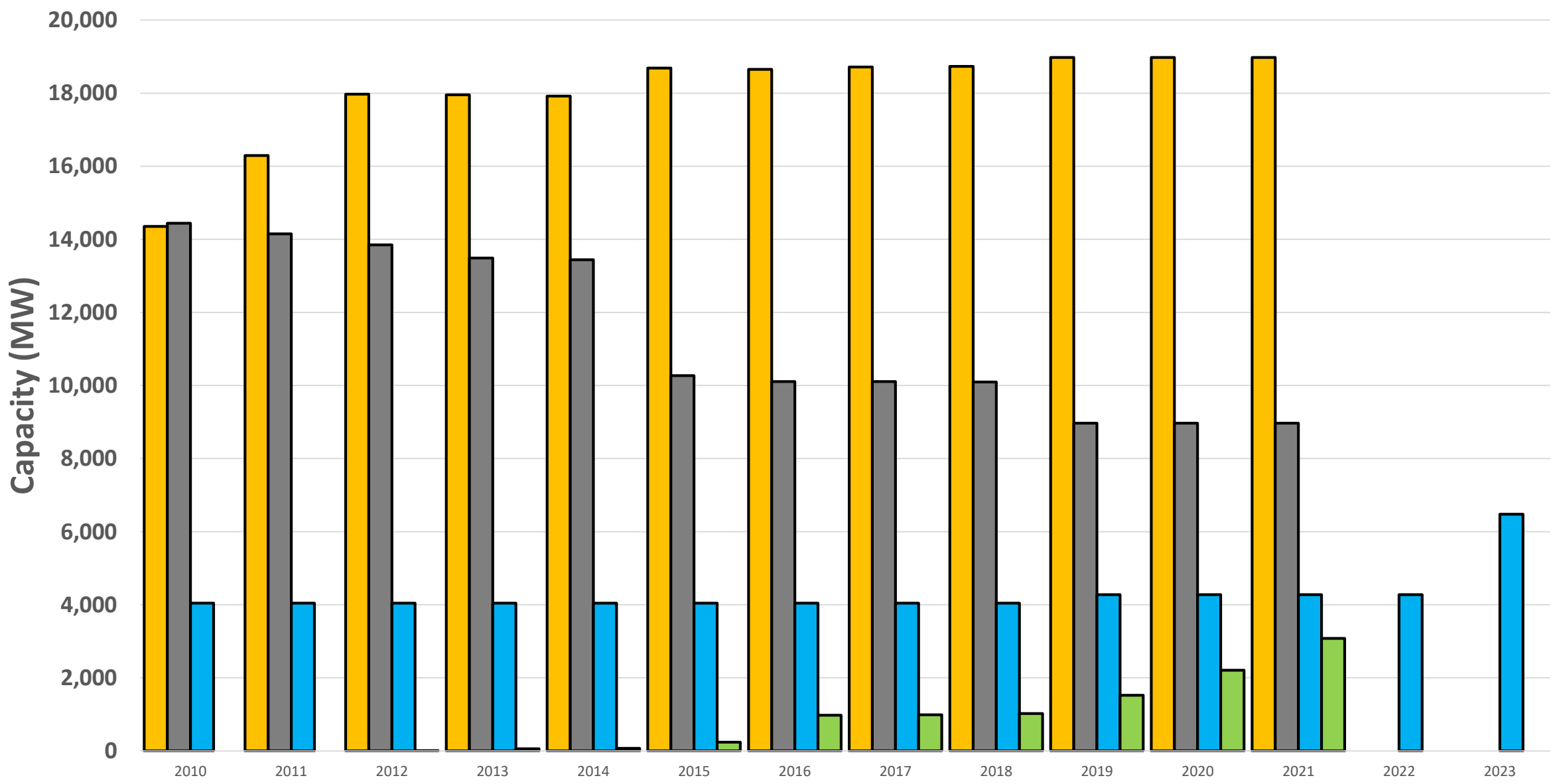
Notes: APAC = Asia-Pacific region excluding India. ROW = rest of world.

Source: [IEA](#)

Source: IEA analysis based on BNEF (2022a), IEA PVPS, SPV Market Research, RTS Corporation and PV InfoLink.

Georgia Electric Power Sector Trends

■ Natural Gas ■ Coal ■ Nuclear ■ Solar



Summary Points

- Calculated and measured integration of utility-scale solar
 - PSC, GPC, OPC, EMCs, MEAG
 - Without upward pressure on prices or reduction in reliability
 - As baseload coal capacity declines and natural gas dependency increases
 - With baseload nuclear coming online
- Facilitated by the state's vertically-integrated, regulated market structure and long-term Integrated Resource Planning (IRP) strategy
 - As global supply chain issues unfold, Georgia's IRP and vertically-integrated structure will facilitate the necessary long-term perspective for keeping solar PV growth aligned with the over-arching objective of ensuring system reliability while keeping rates affordable