



# **ASAP**

## **(American Solar Action Plan)**

### **PV-Wind Monthly Slideshow**

**May 2022**

**ASAP**

**Website: [www.solarplan.org](http://www.solarplan.org)**

**Contact: [james.mason@solarplan.org](mailto:james.mason@solarplan.org)**

# Slideshow Objectives

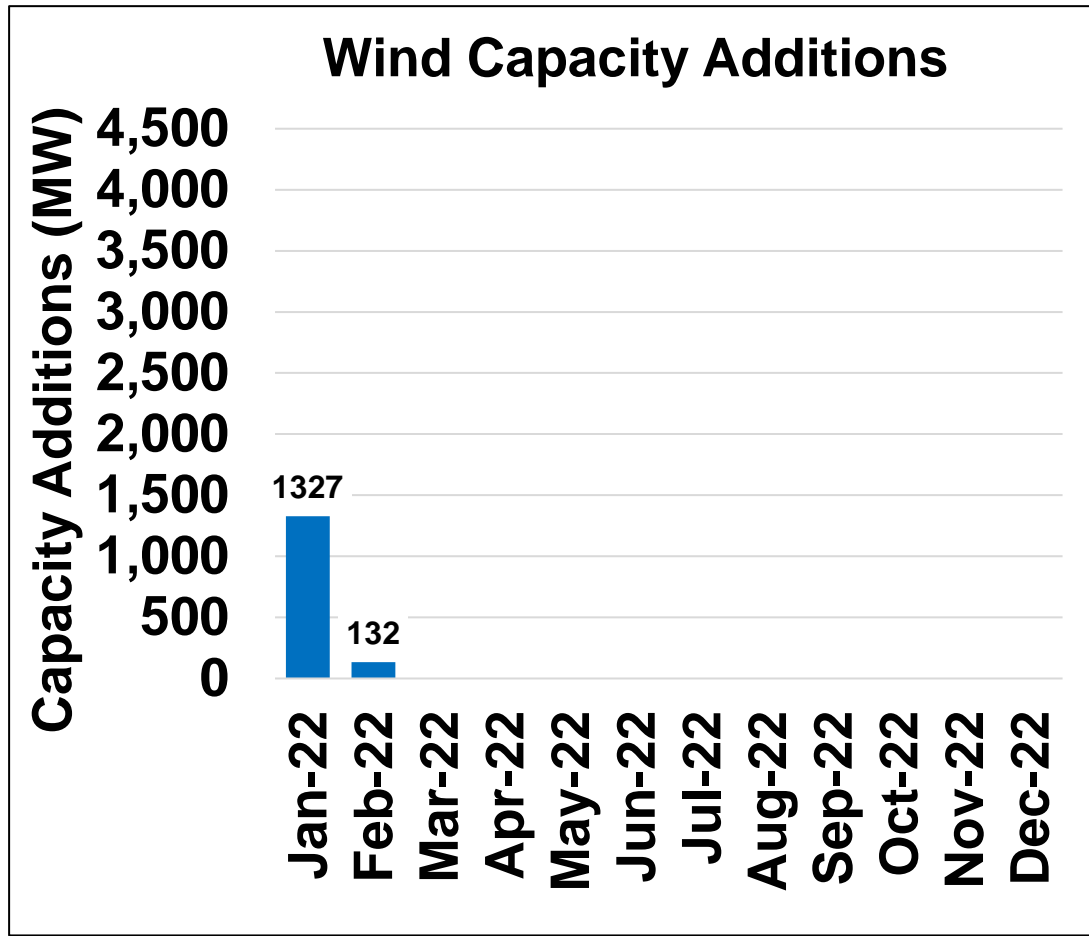
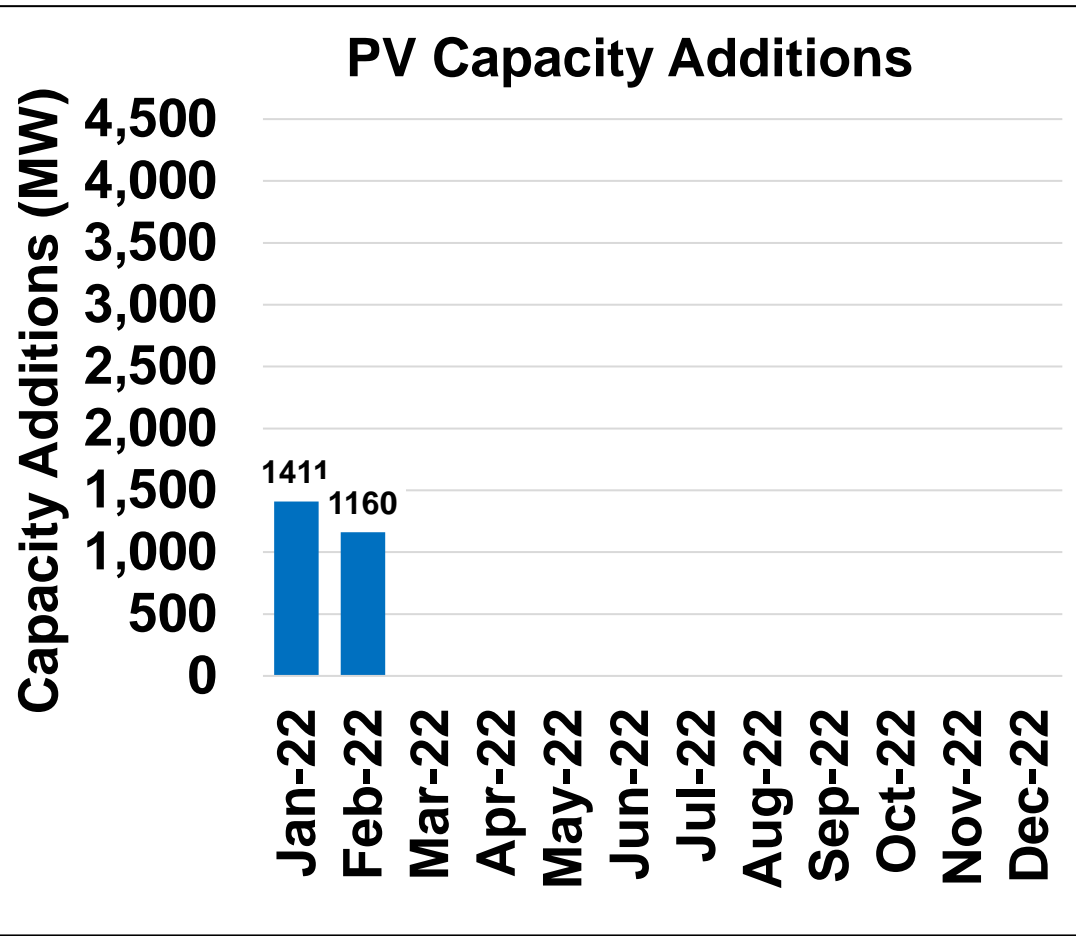


- To Document Monthly and Annual Growth in PV and Wind Capacity and Electricity Generation
  - MW = megawatts; GW = gigawatts (1000 MW); TW = terawatts (1000 GW)
- PV and Wind Capacity Additions
  - The Graphs Show Current and Past Year Monthly PV and Wind Capacity Additions
  - For Perspective, Compare Current Monthly Capacity Additions to the Long-Term Goals
    - U.S. PV Long-Term Goal (2040 forward)
      - Monthly Average – 8 GW of Capacity Additions
      - Annual Average – 96 GW of Capacity Additions
    - U.S. Wind Long-Term Goal (2040 forward)
      - Monthly Average – 4 GW of Capacity Additions
      - Annual Average – 48 GW of Capacity Additions
    - World PV Long-Term Goal (2040 forward)
      - Annual Average – 700 GW of Capacity Additions
    - World Wind Long-Term Goal (2040 forward)
      - Annual Average – 300 GW of Capacity Additions
- Slides Present U.S. Monthly PV, Wind and Fossil Fuel Electricity Generation to Show Seasonality

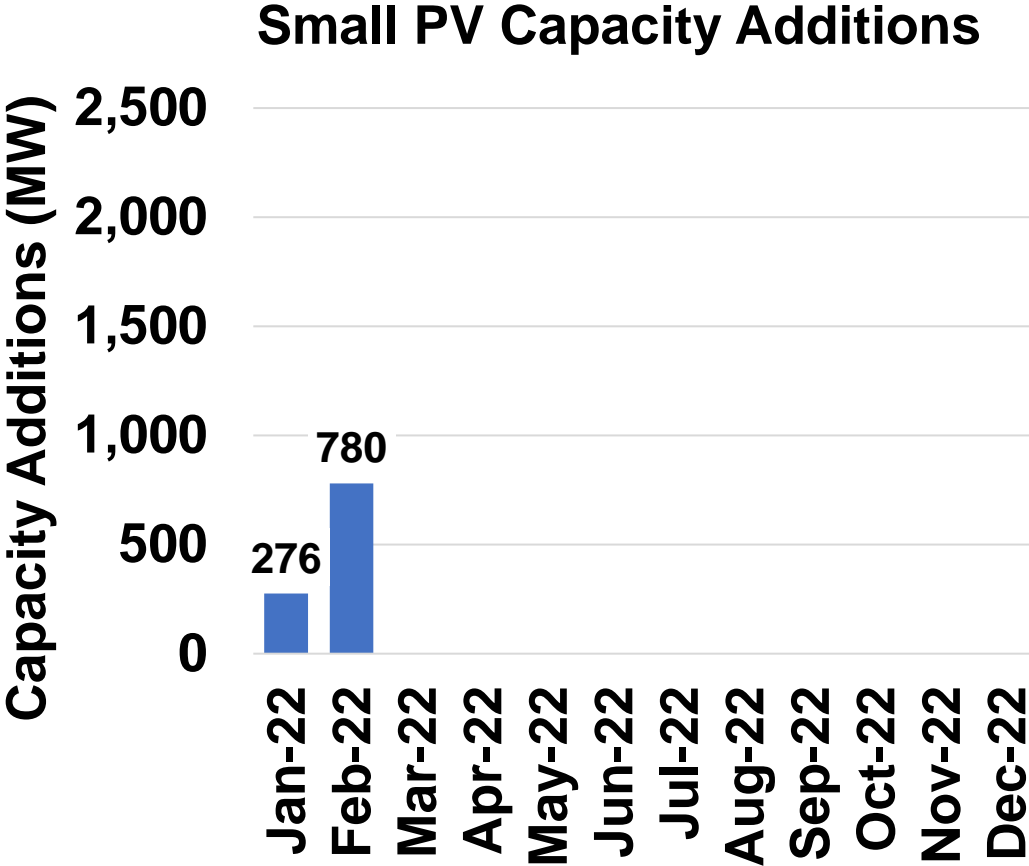
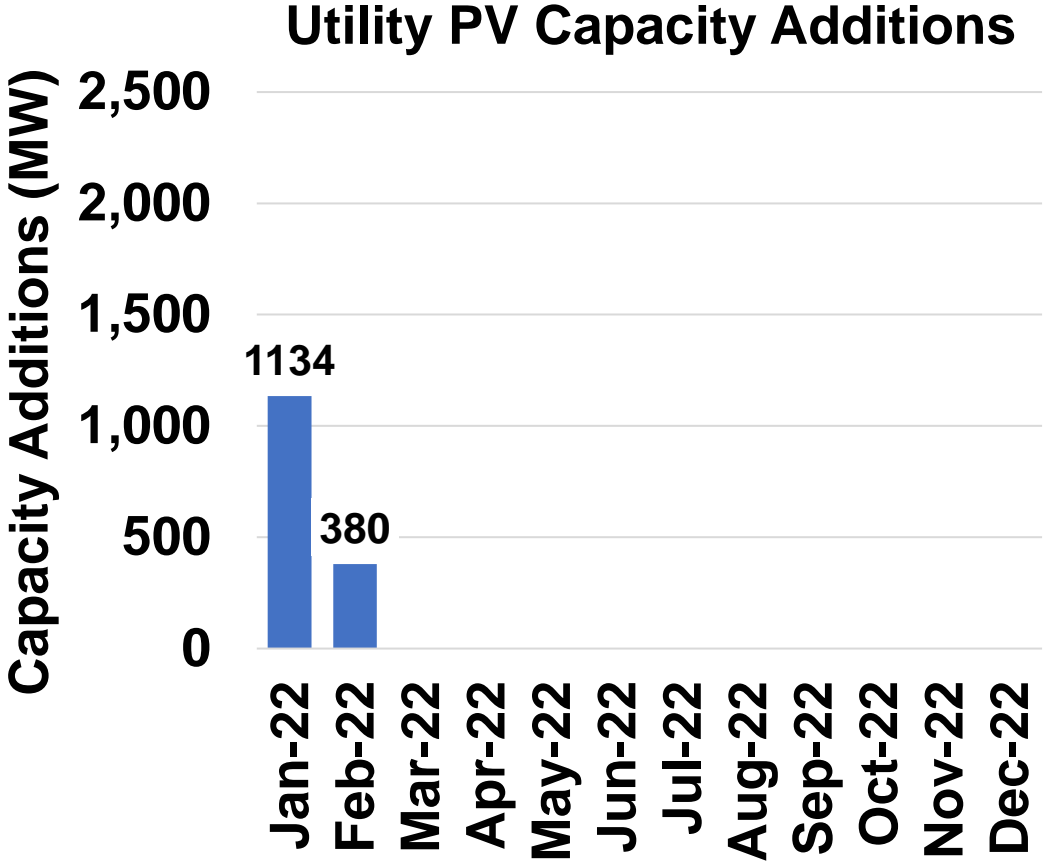


# U.S. PV and Wind Capacities

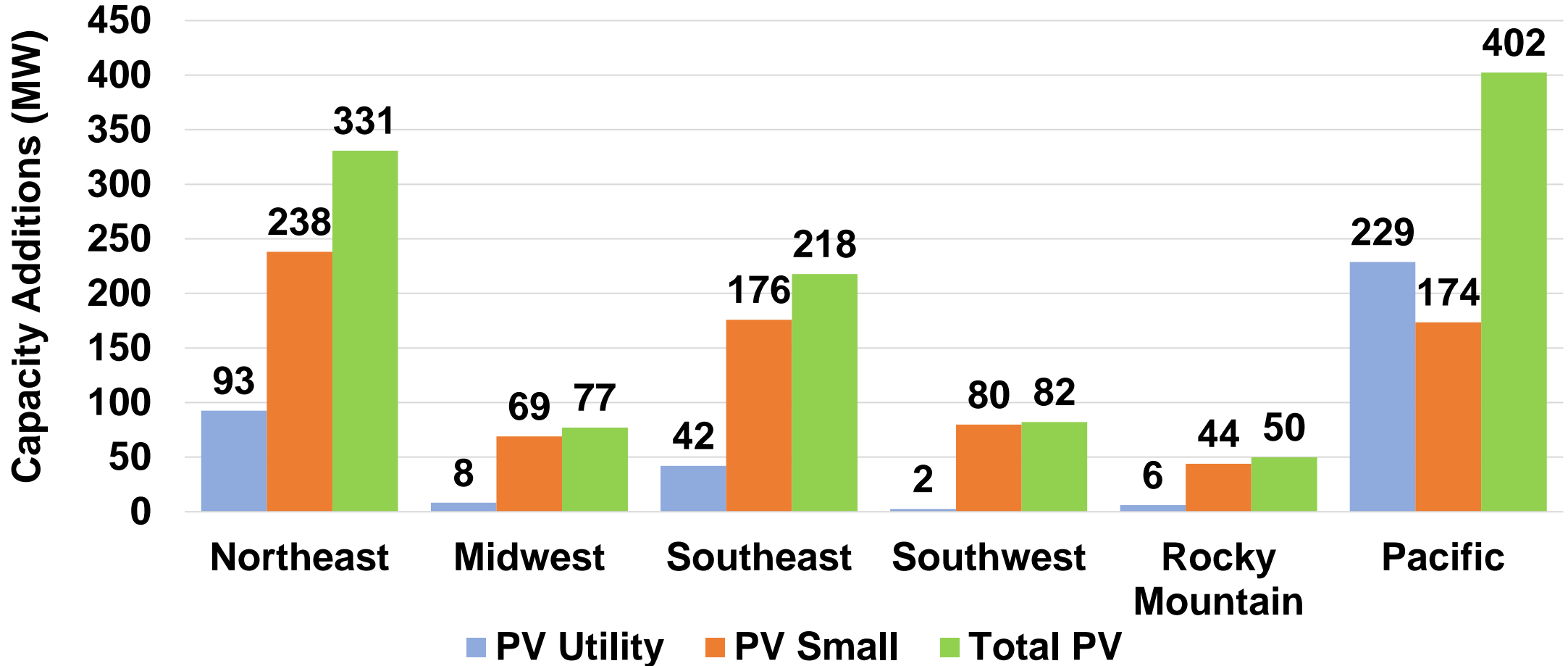
# U.S. PV and Wind Monthly Capacity Additions 2022 (through February)



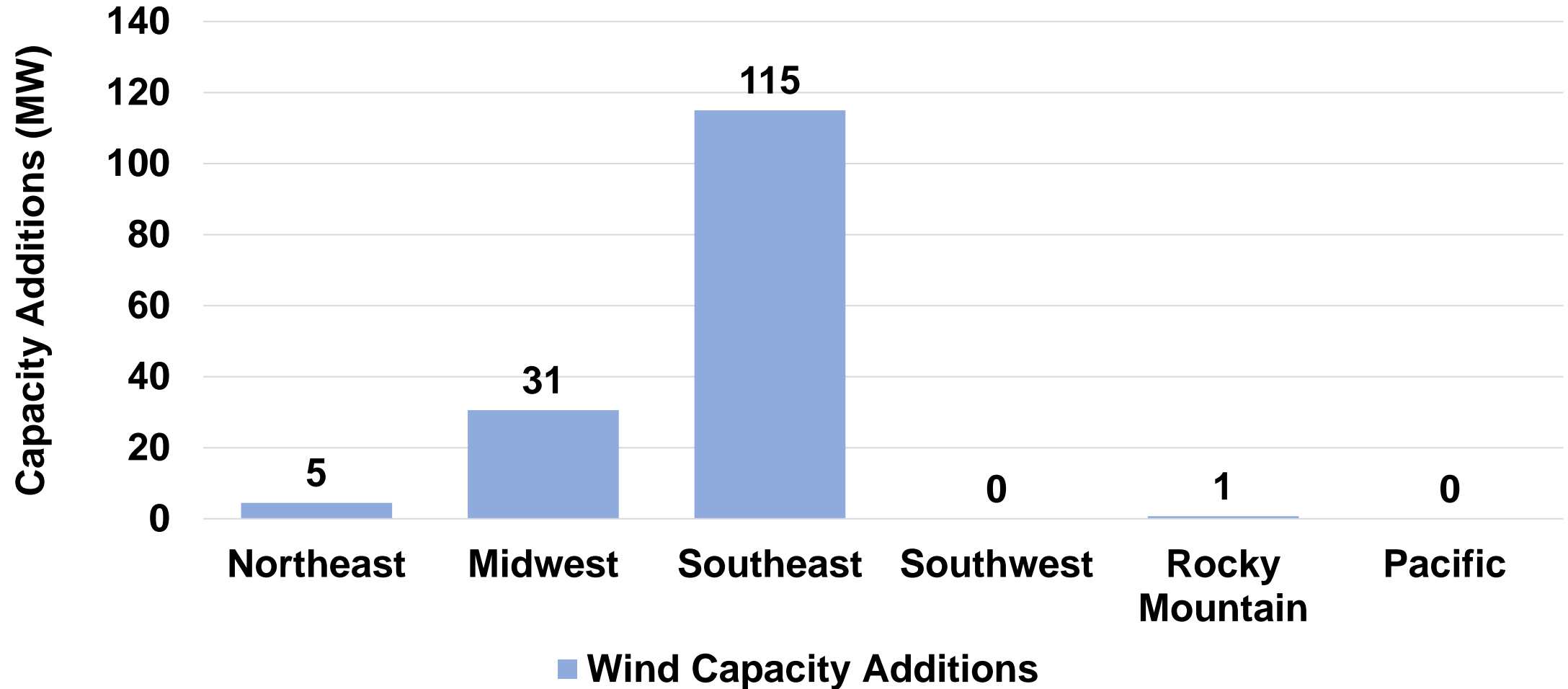
# Monthly Utility and Small PV Capacity Additions 2022 (through February)



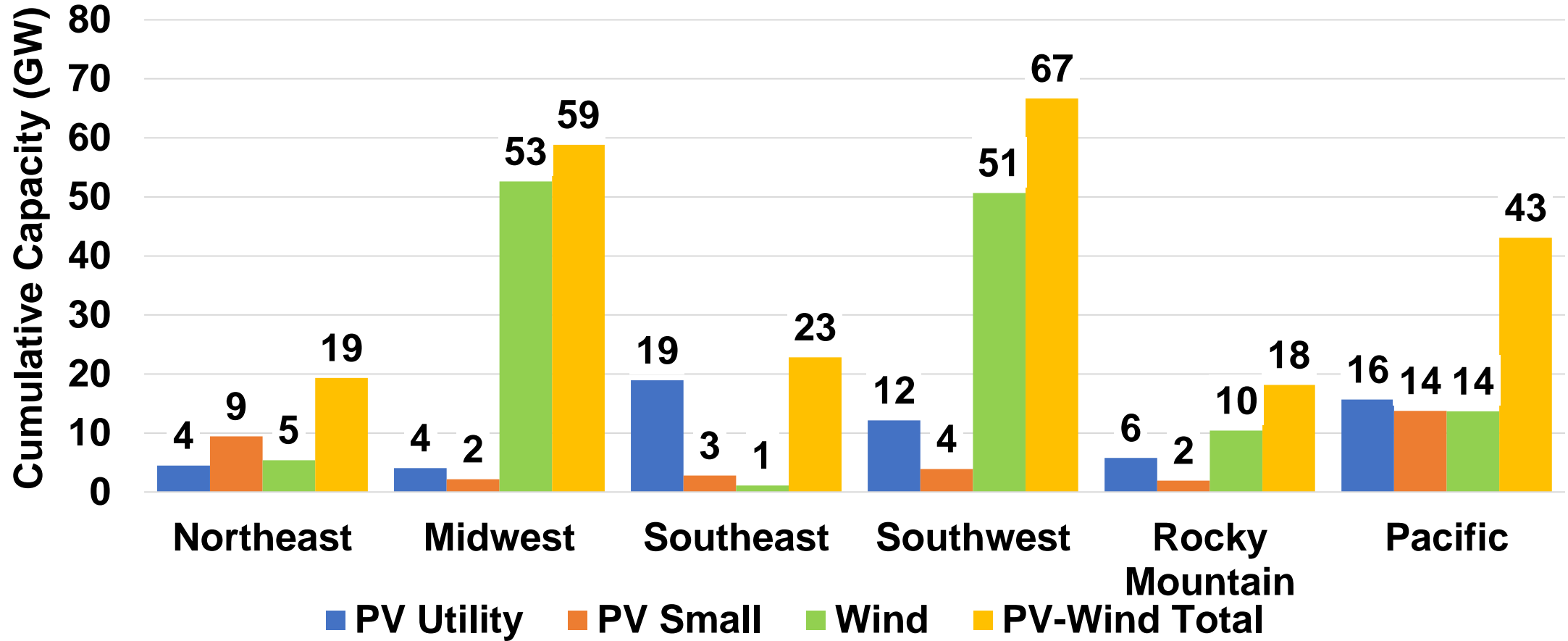
# Regional PV Capacity Additions February 2022



# Regional Wind – Capacity Additions February 2022

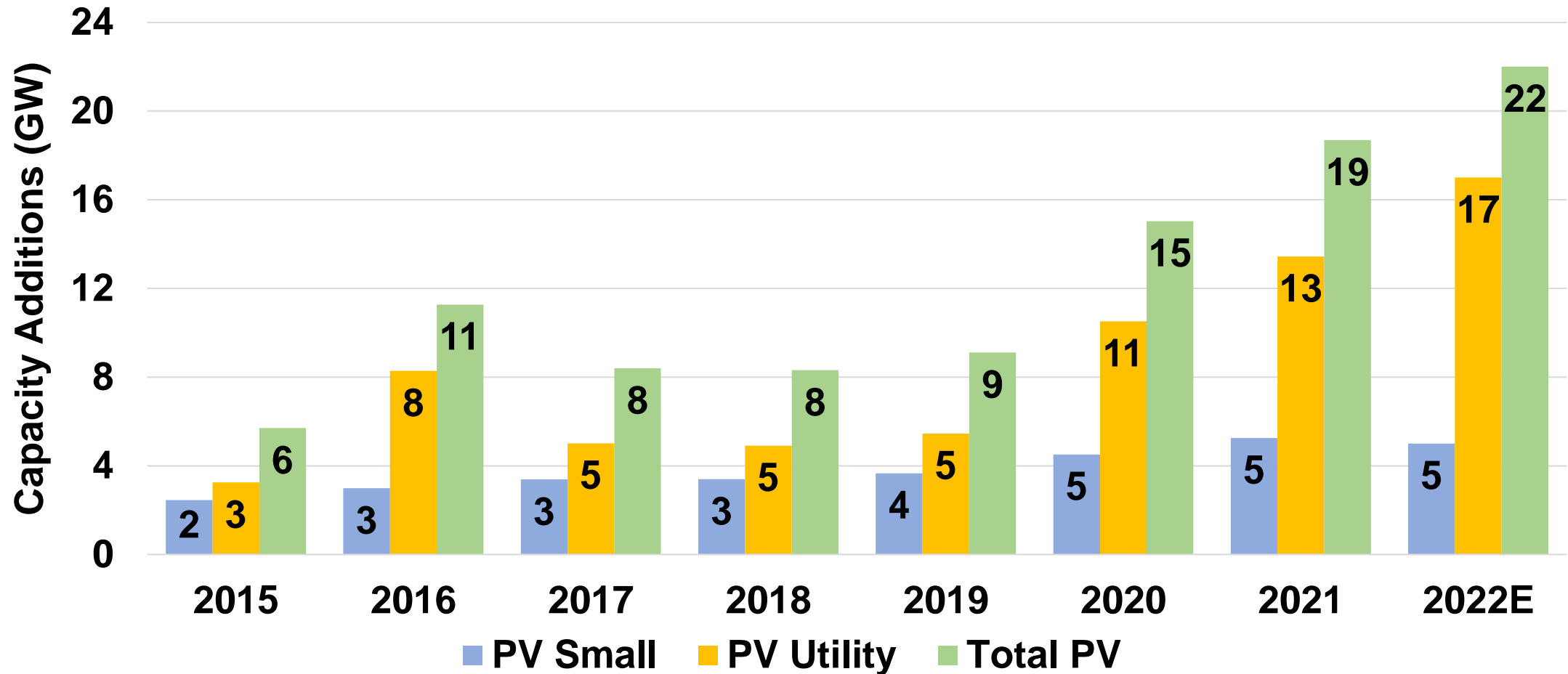


# PV and Wind Cumulative Capacity by Region through February 2022

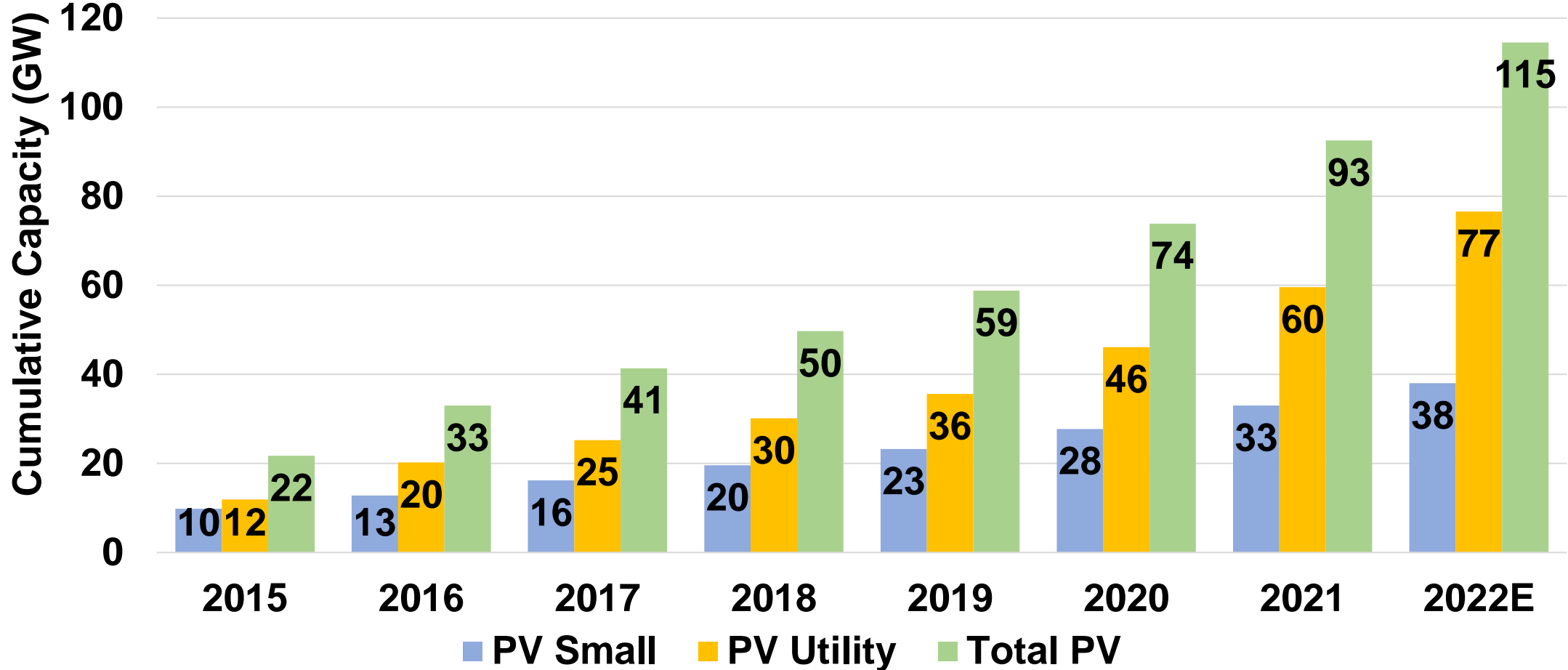




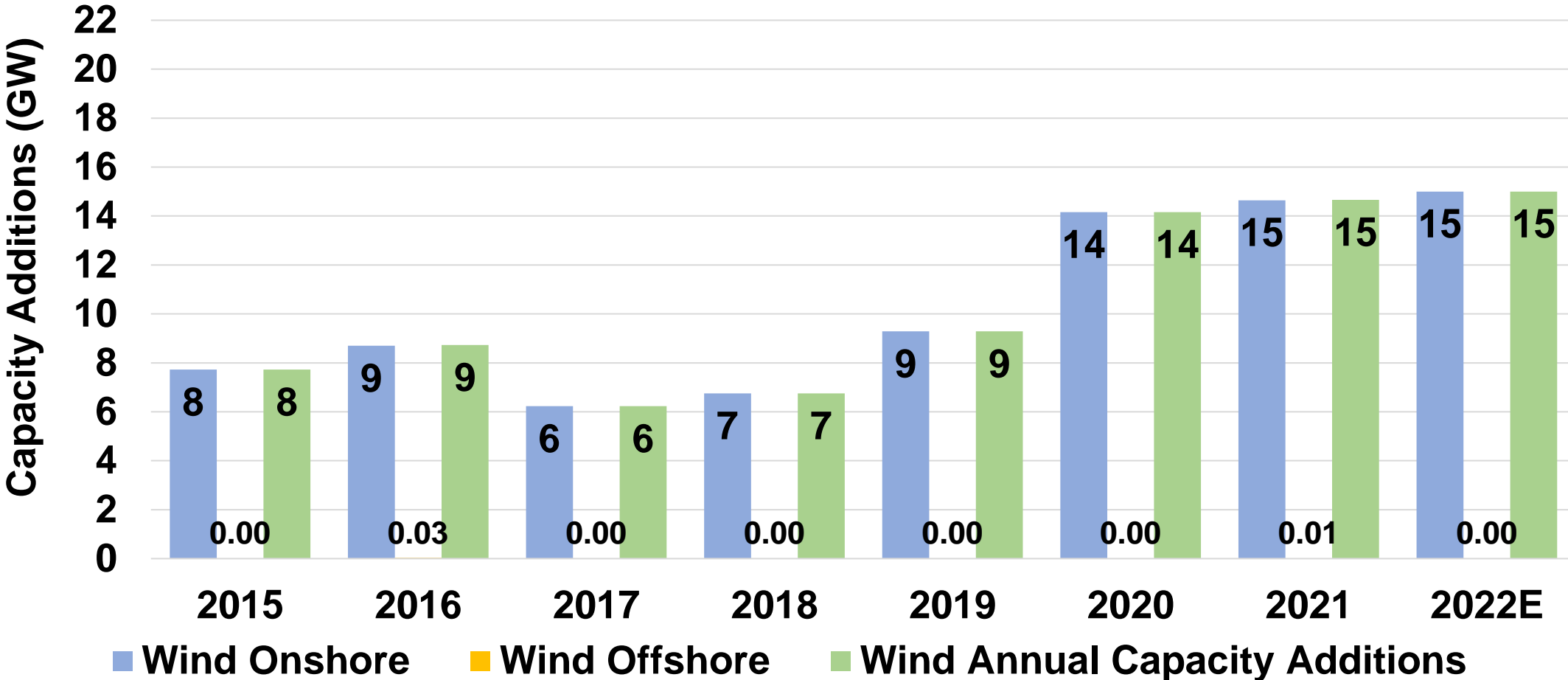
# PV Annual Capacity Additions 2022 Forecast



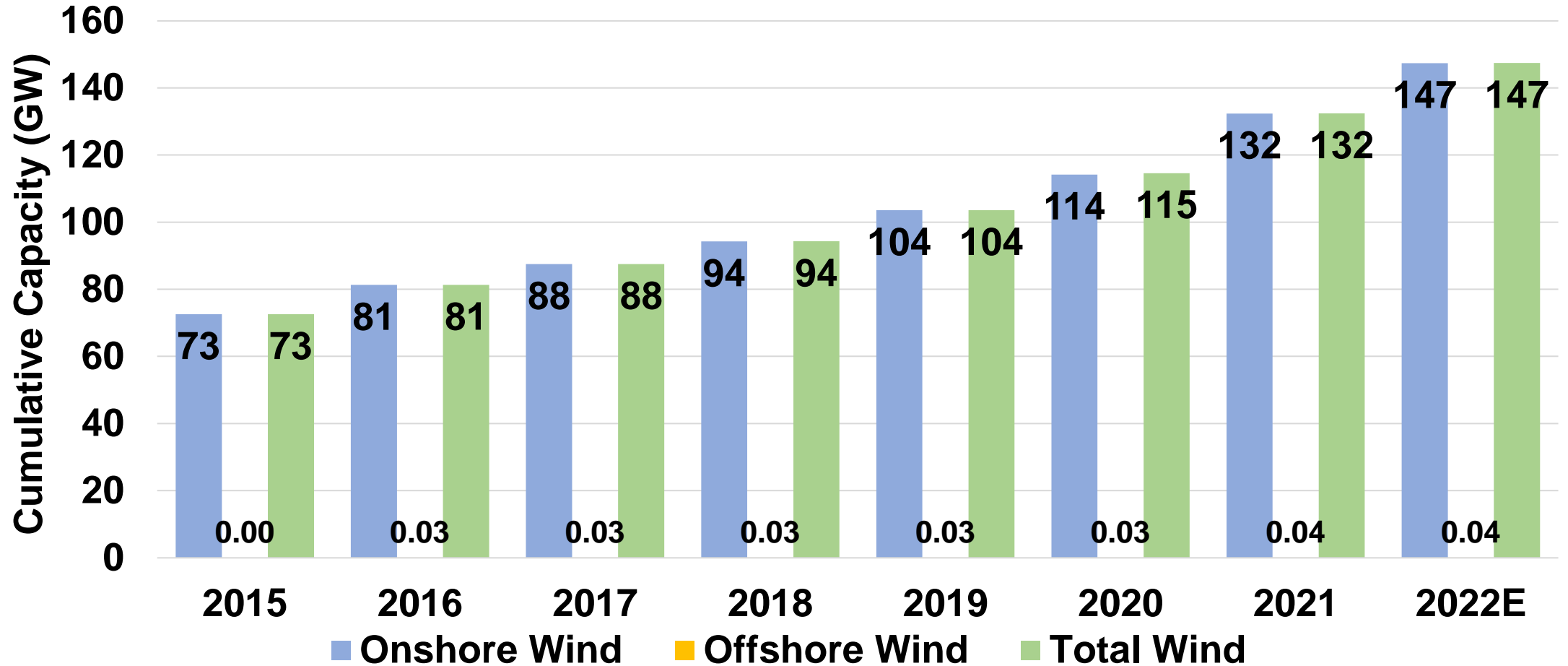
# PV Annual Cumulative Capacity 2022 Forecast



# Wind Annual Capacity Additions 2022 Forecast



# Wind Annual Cumulative Capacity 2022 Forecast

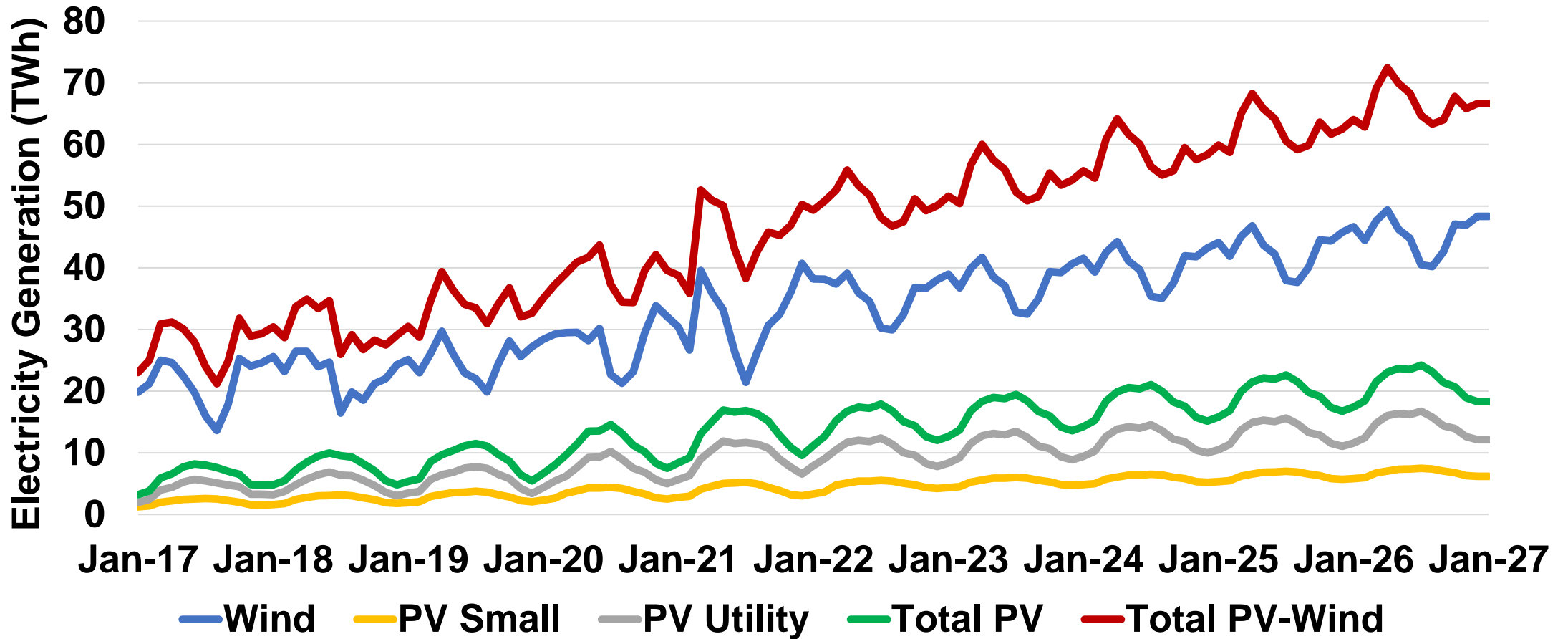




# U.S. PV and Wind Electricity Generation

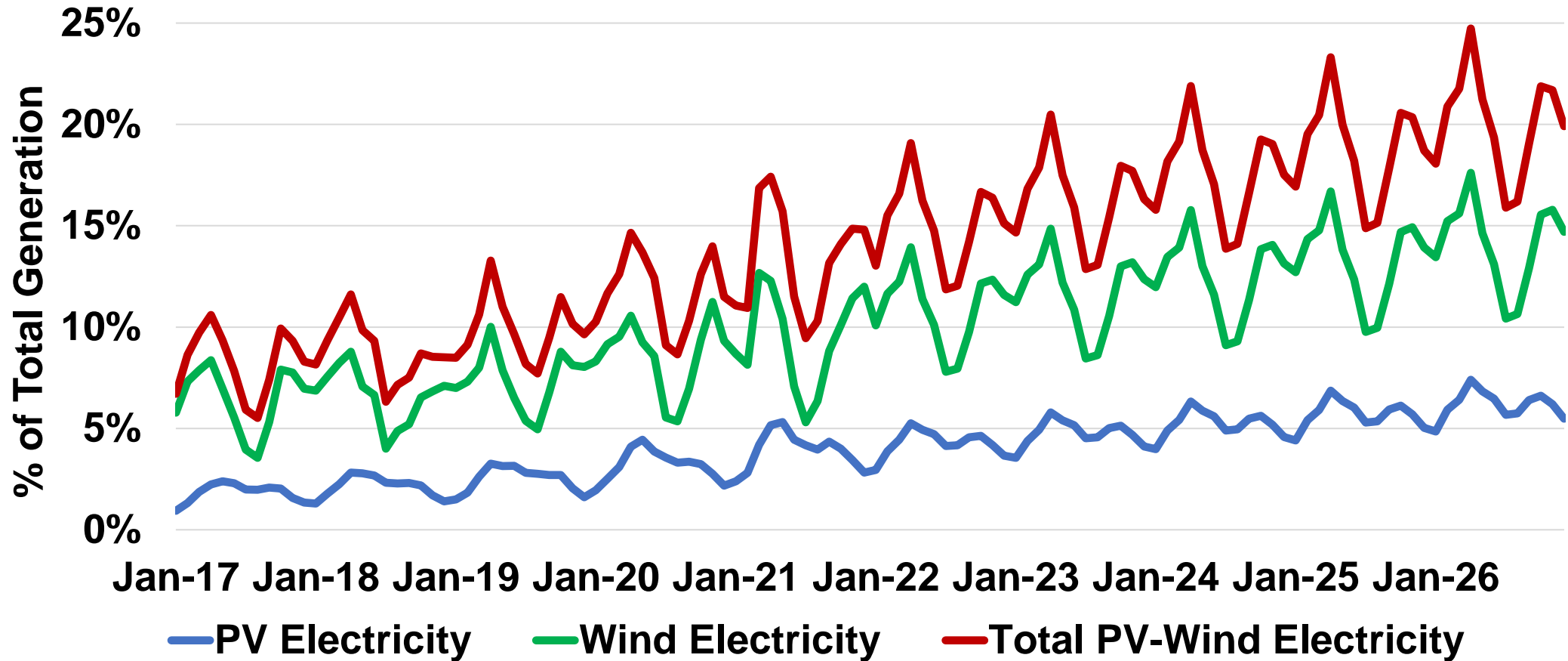
# U.S. PV & Wind Monthly Electricity Generation (2017-2026)

Actual through February 2022; Forecast through Dec. 2026



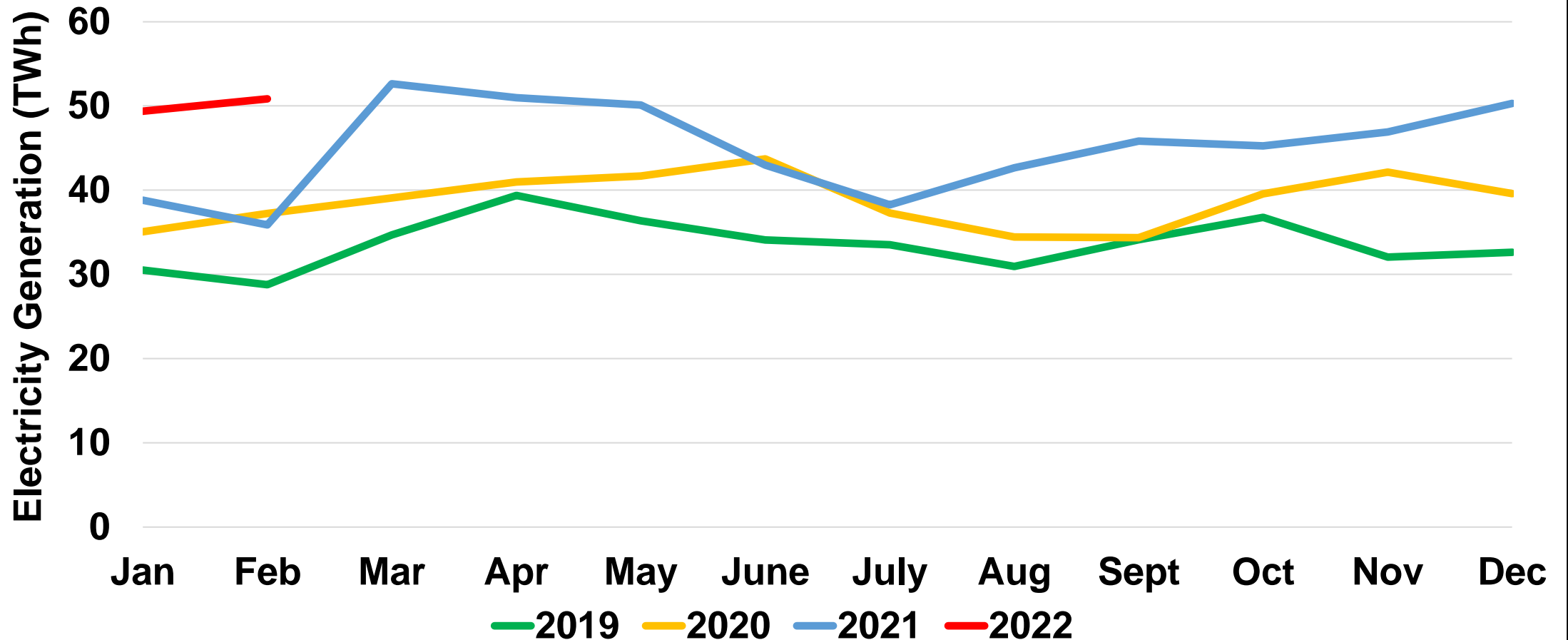
Note: PV Small is less than 1.0 MW; PV Utility is 1.0 MW and greater

# U.S. PV & Wind Electricity as % of Total Generation Actual through February 2022; Forecast through Dec. 2026



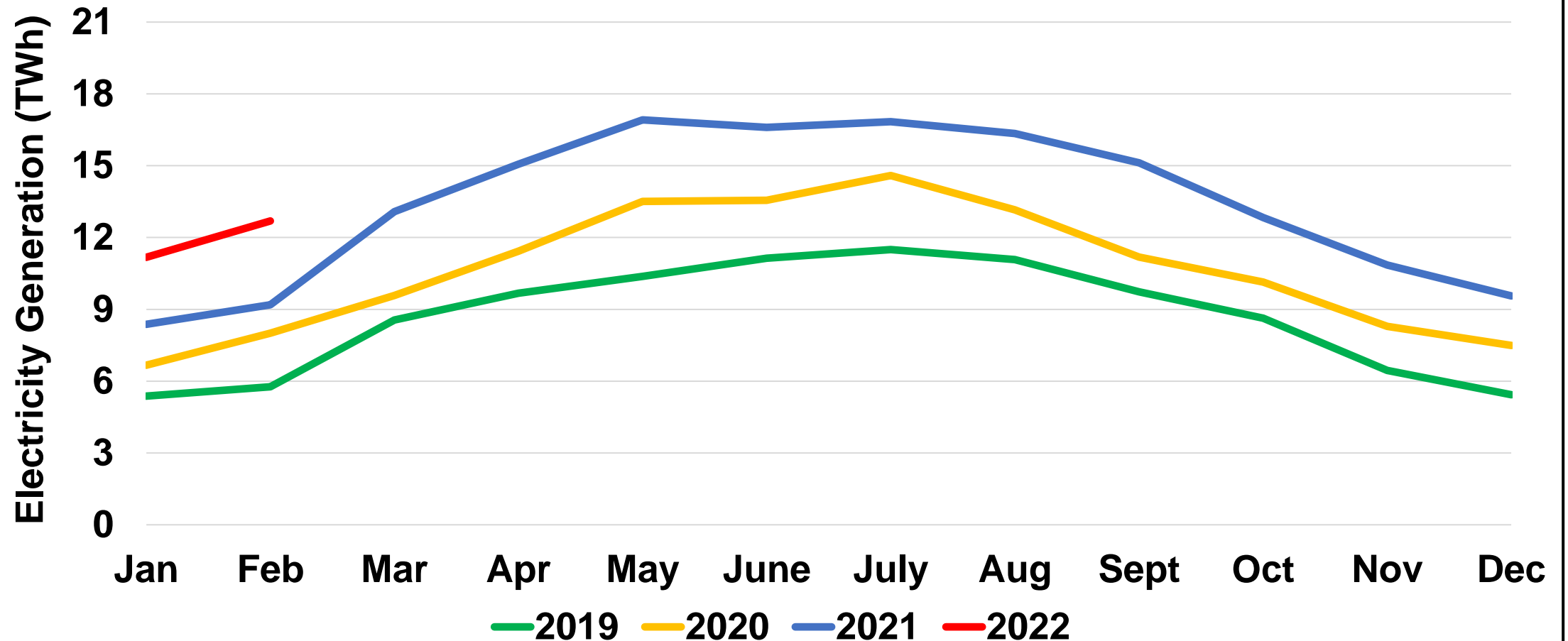
Note: Fossil fuel electricity generation was 60% of total 2020 electricity generation.

# Combined PV and Wind Electricity Generation Year-on-Year (through February 2022)

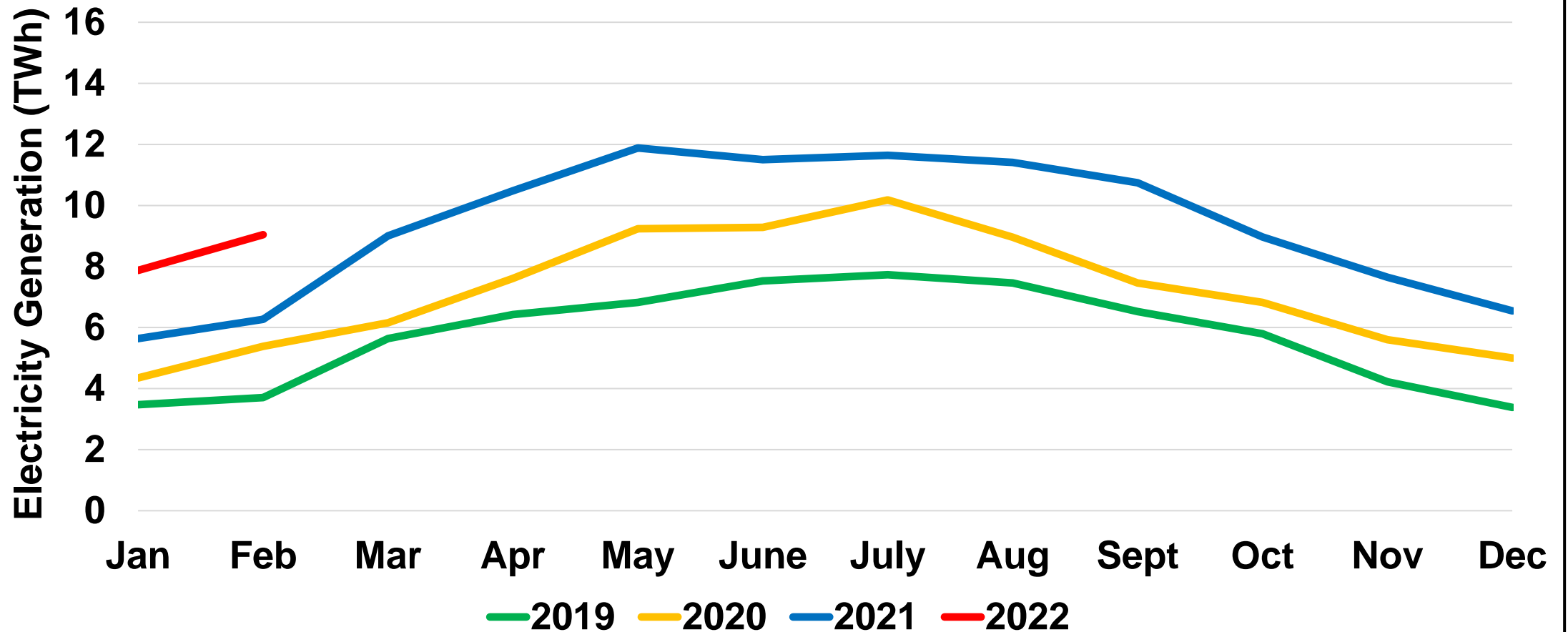




# PV Electricity Generation Year-on-Year (through February 2022)

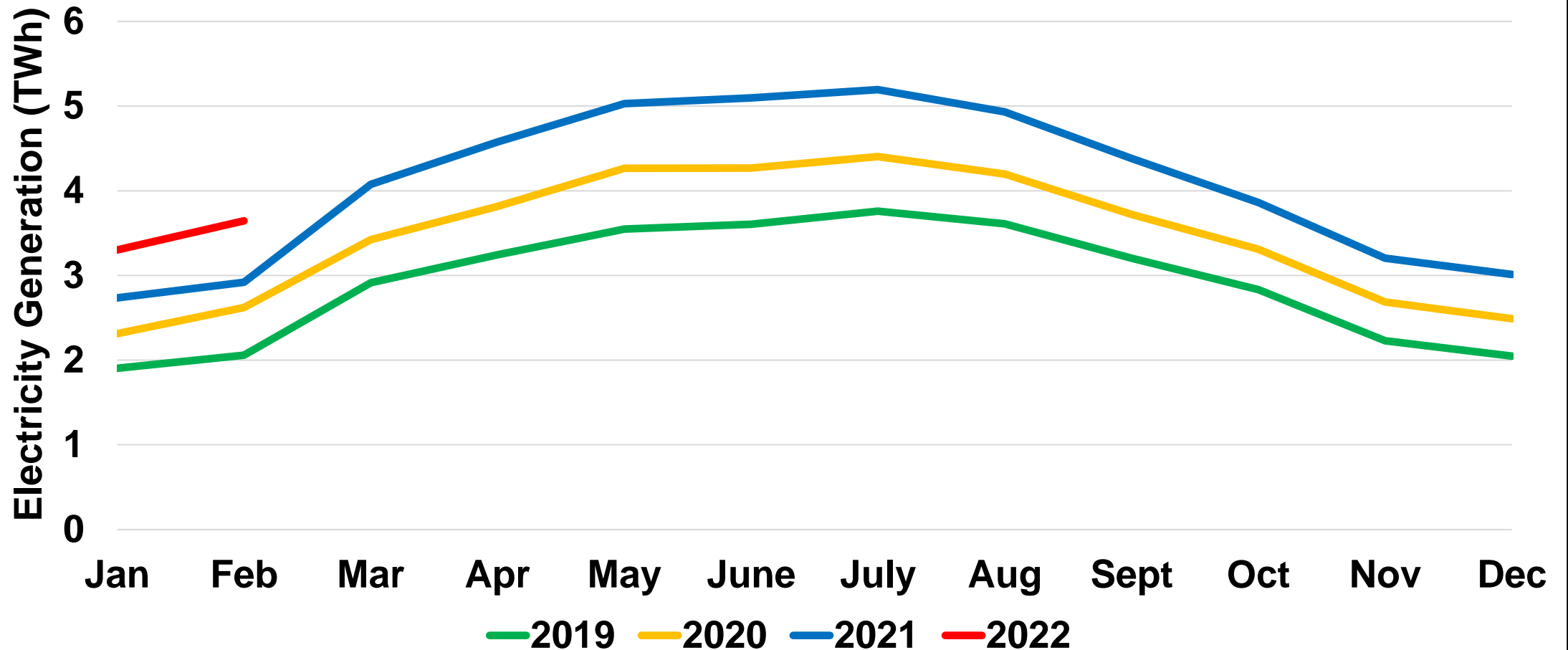


# Utility PV Electricity Generation Year-on-Year (through February 2022)

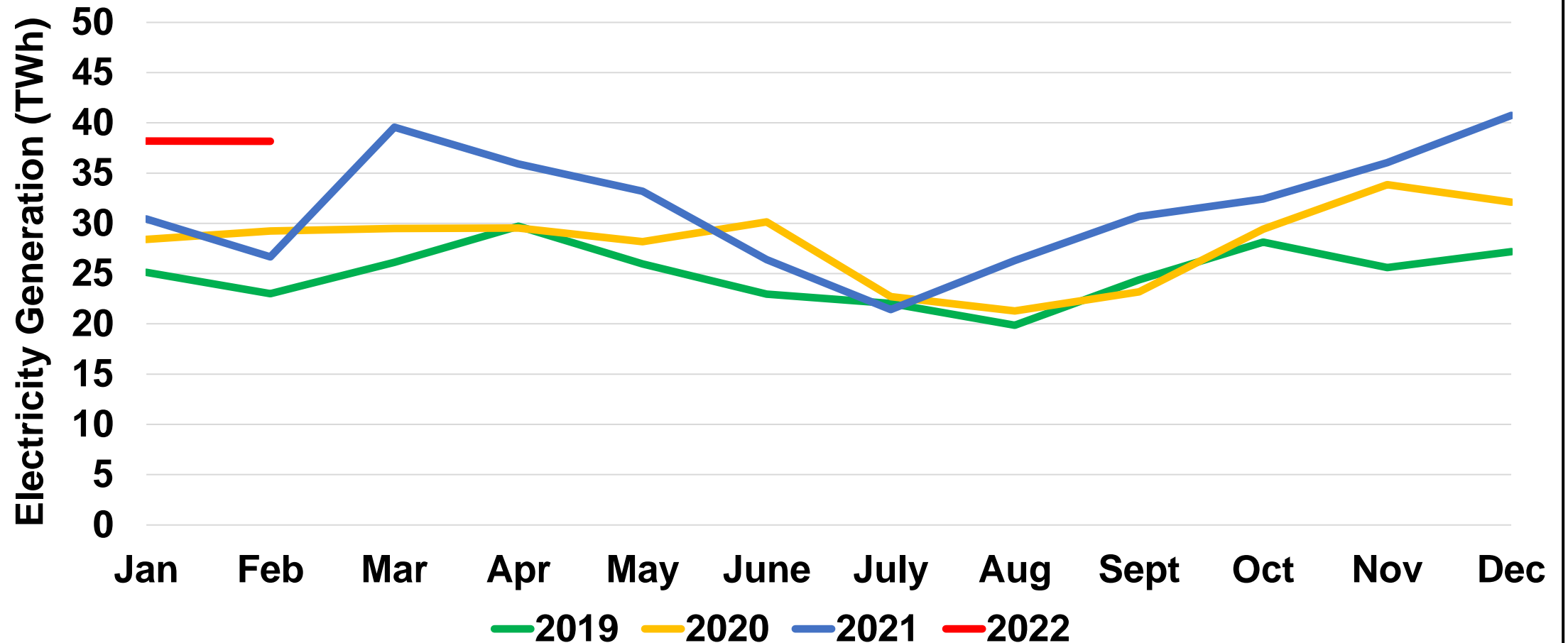


Note: PV Utility is greater than 1.0 MW

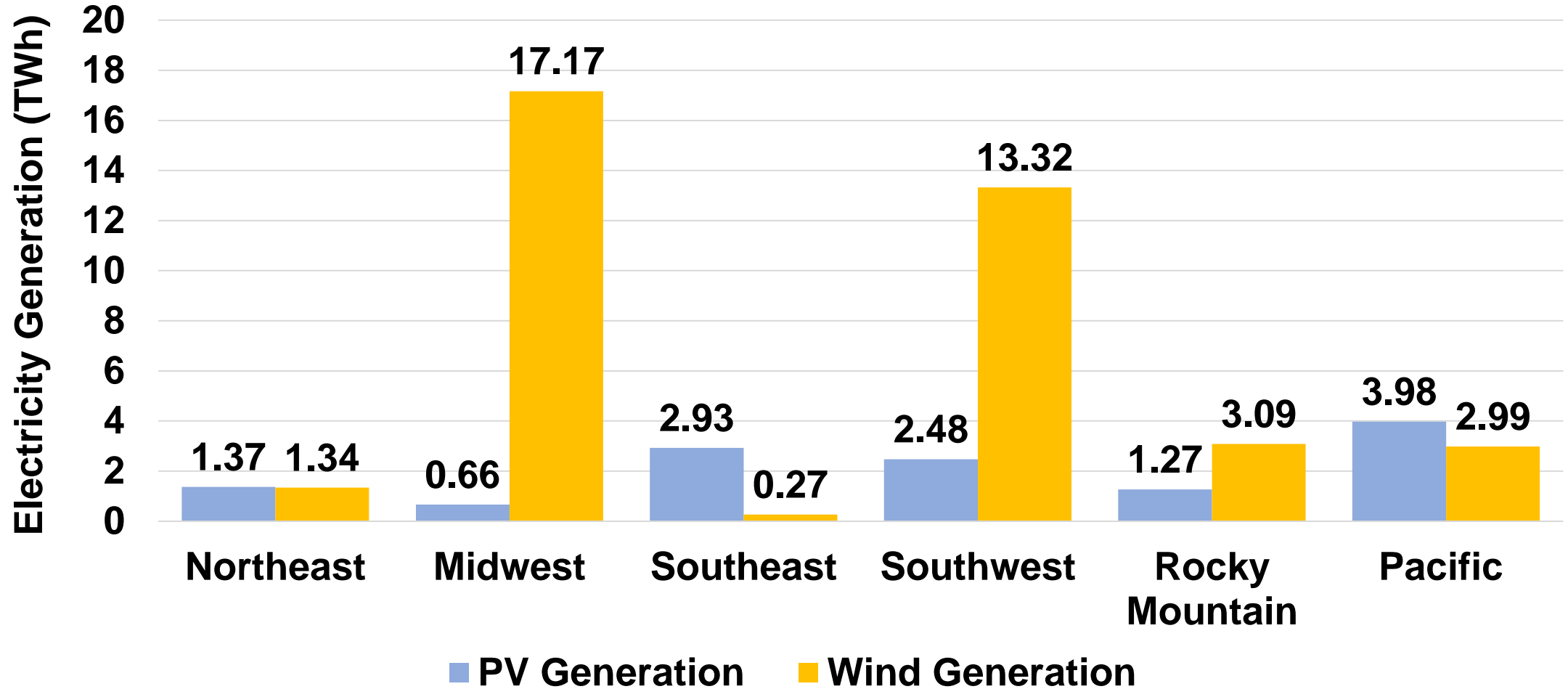
# Small PV Electricity Generation Year-on-Year (through February 2022)



# Wind Electricity Generation Year-on-Year (through February 2022)



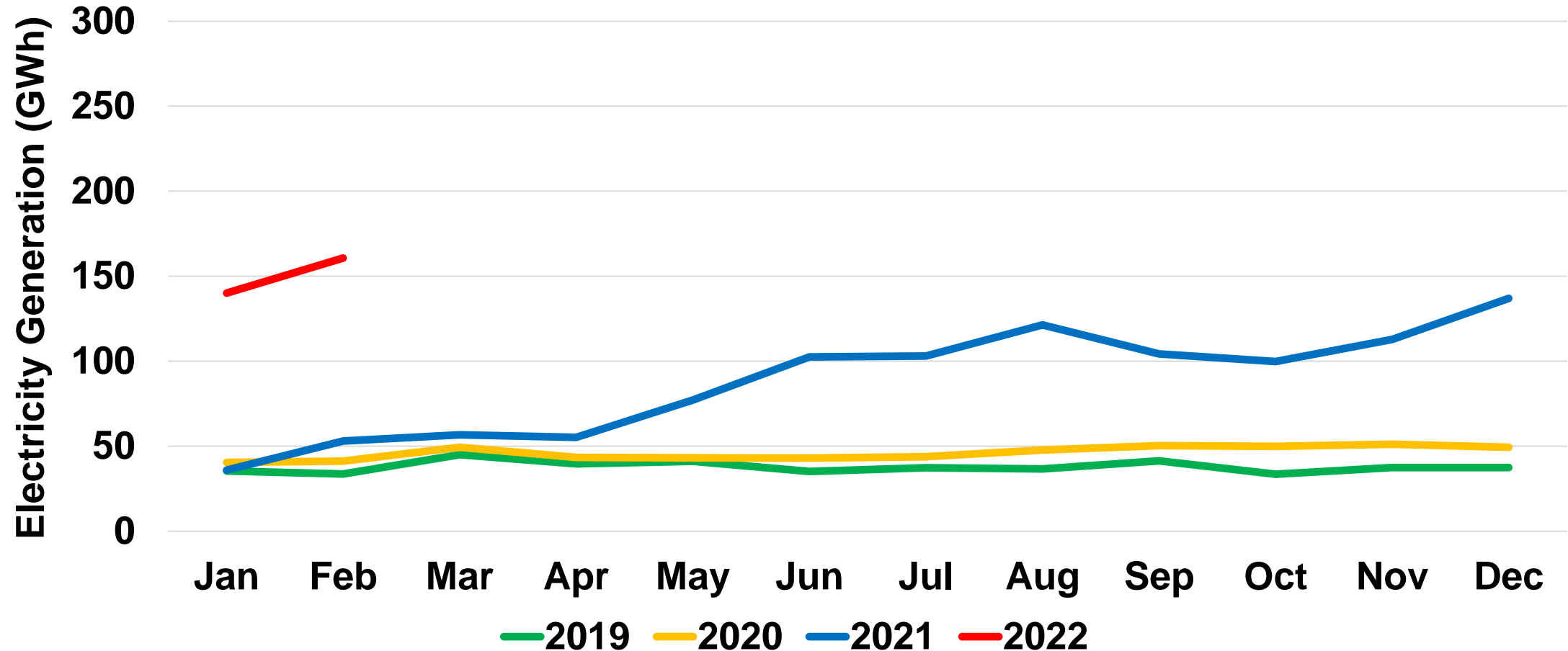
# Regional PV & Wind Electricity Generation February 2022



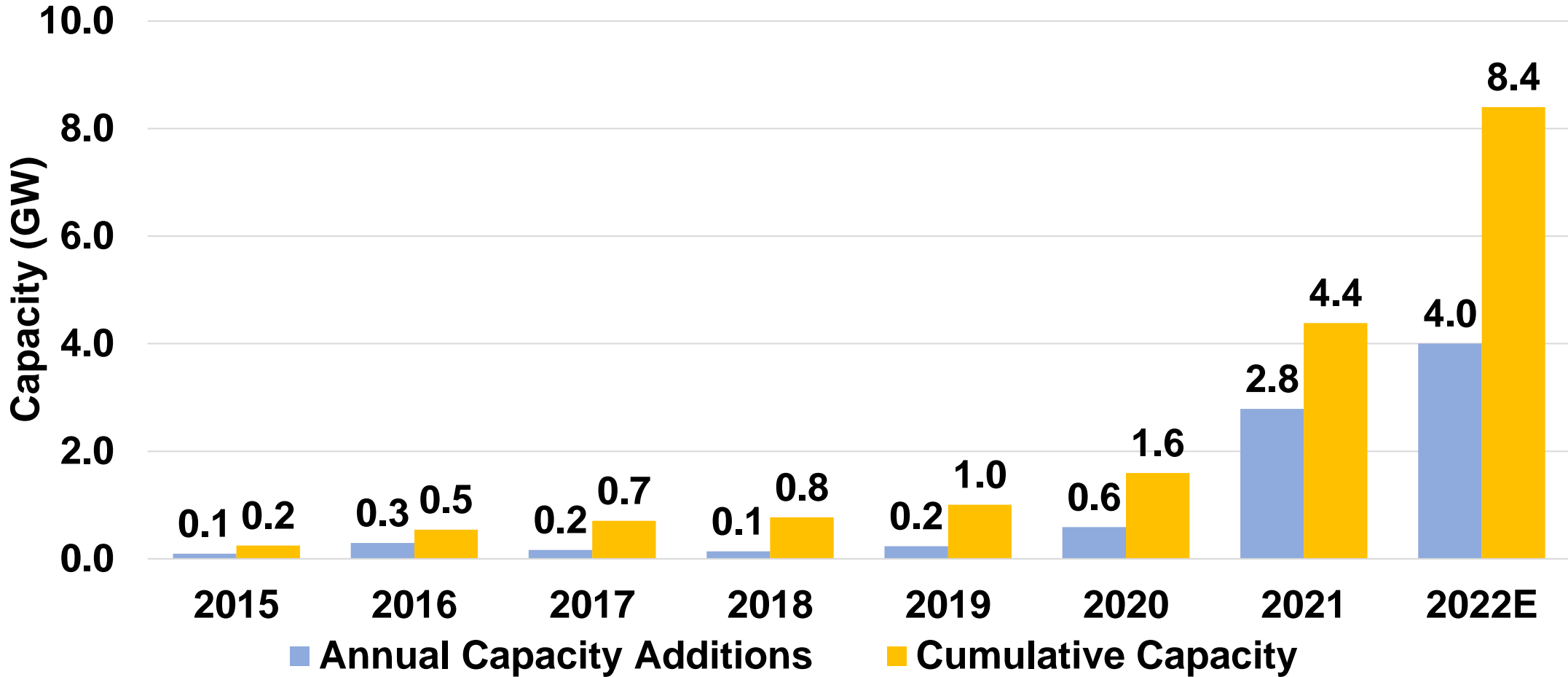


# U.S. Battery Storage

# Battery Electricity Generation Year-on-Year (through February 2022)



# Battery Storage Cumulative Capacity and Annual Capacity Additions 2022 Forecast

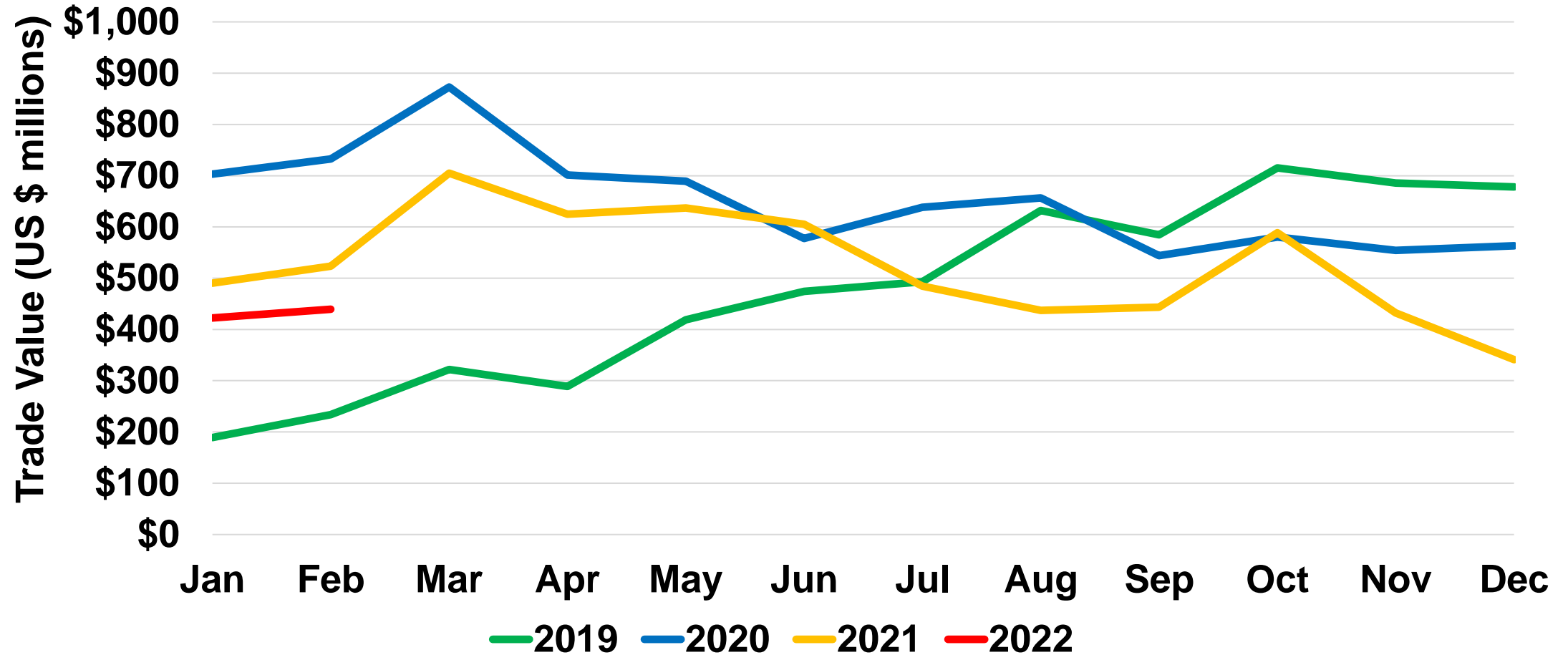




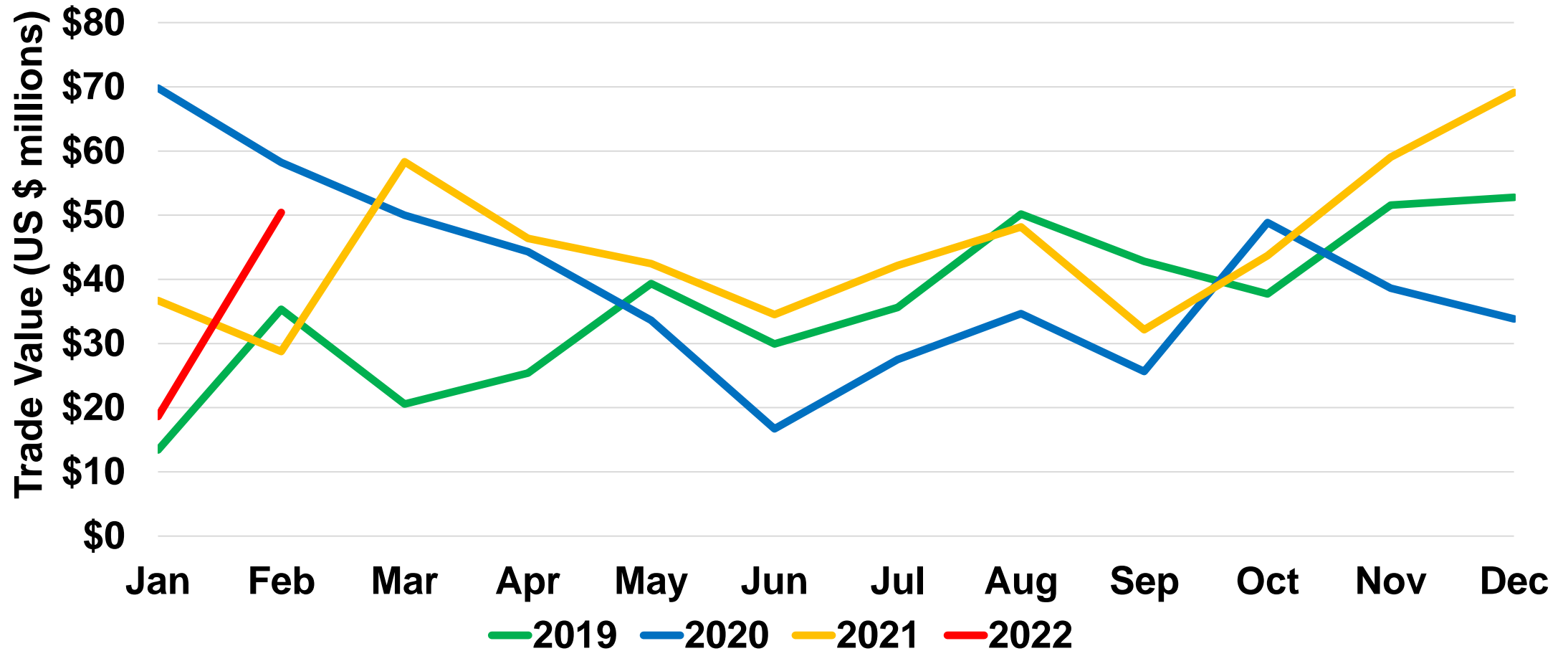


# **U.S. PV Trade (Cells and Modules)**

# U.S. Year-on-Year PV Panel Imports (through February 2022)



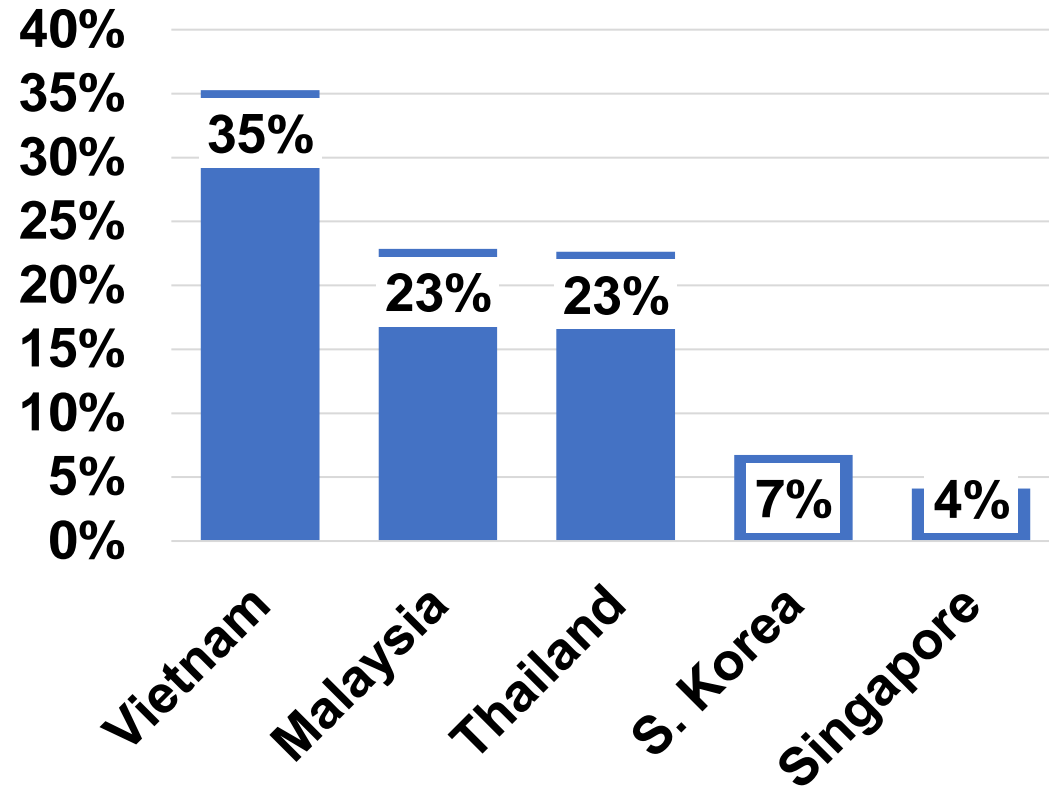
# U.S. Year-on-Year PV Cell Imports (through February 2022)



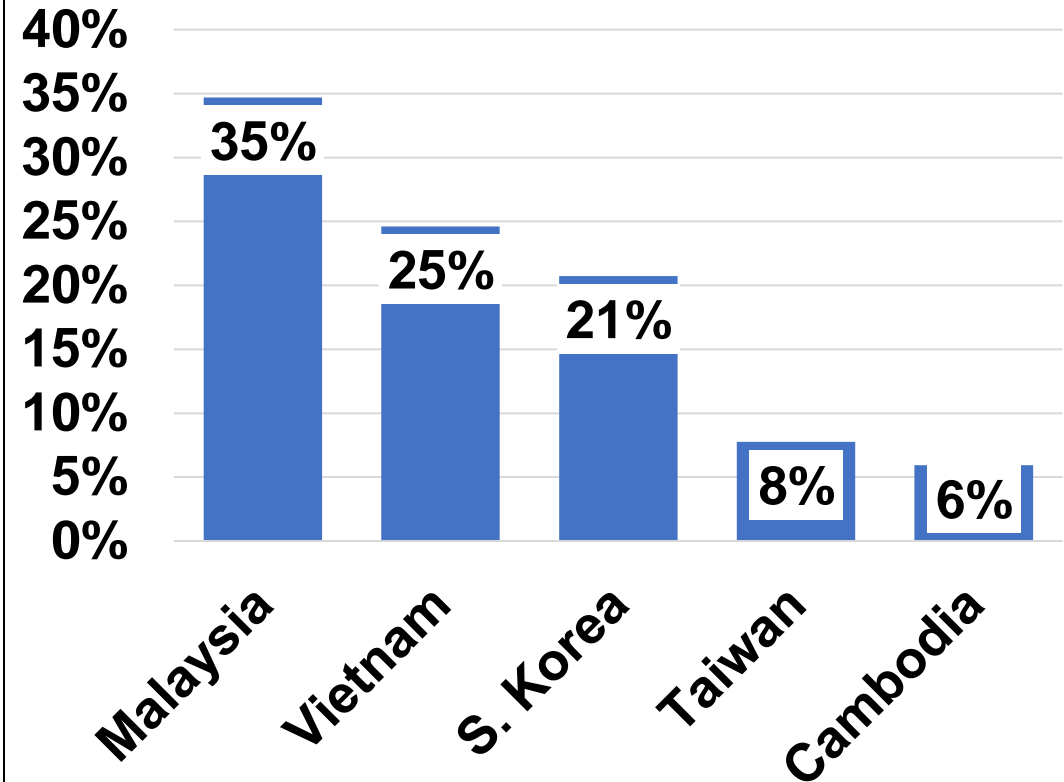
# Monthly U.S. PV Panel and Cell Imports by Country February 2022



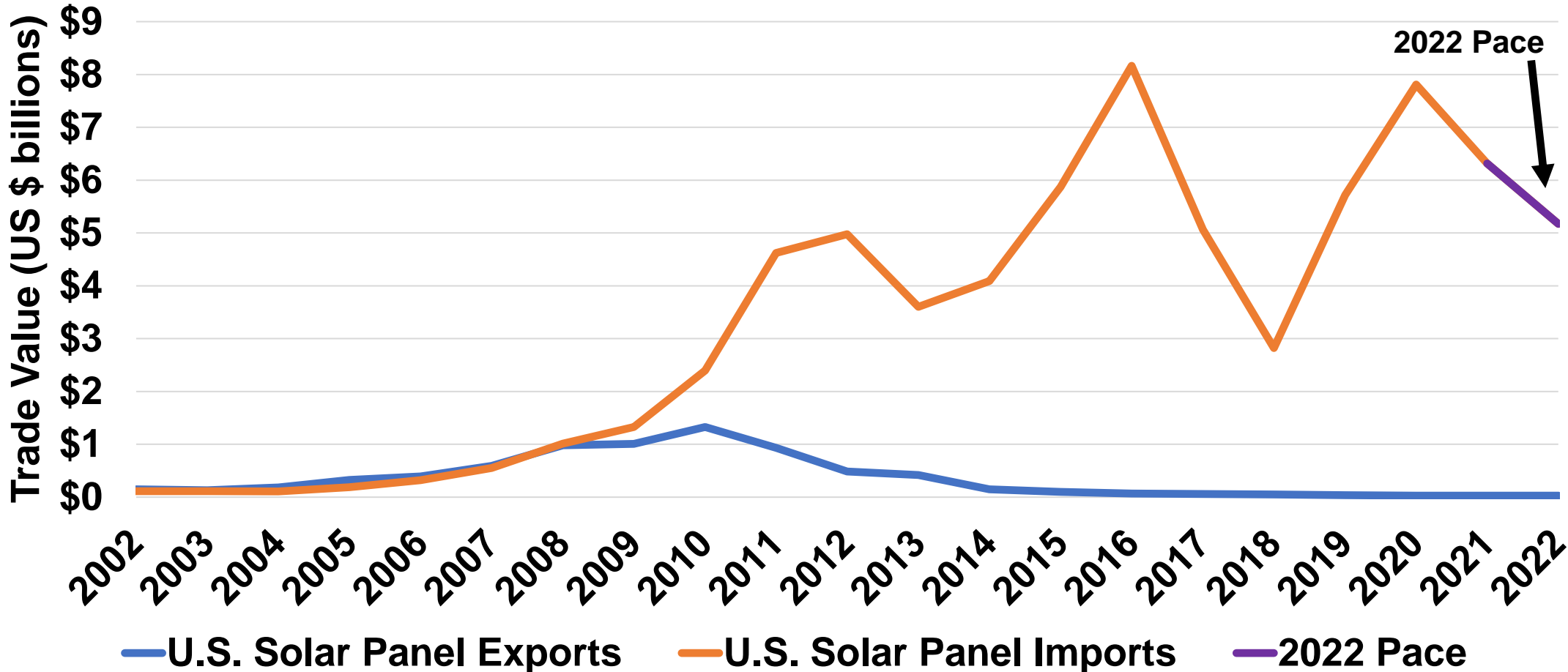
## U.S. PV Panel Imports by Country



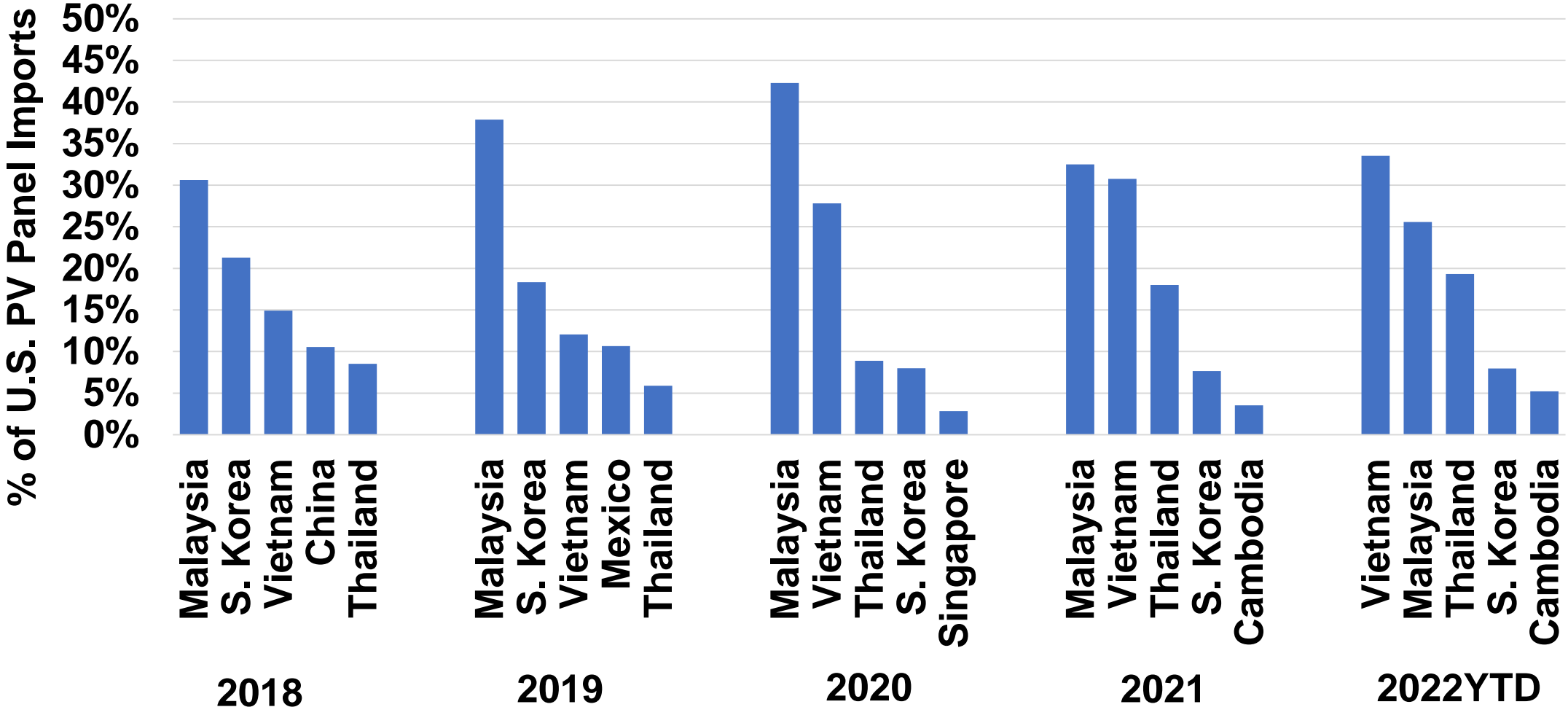
## U.S. PV Cell Imports by Country



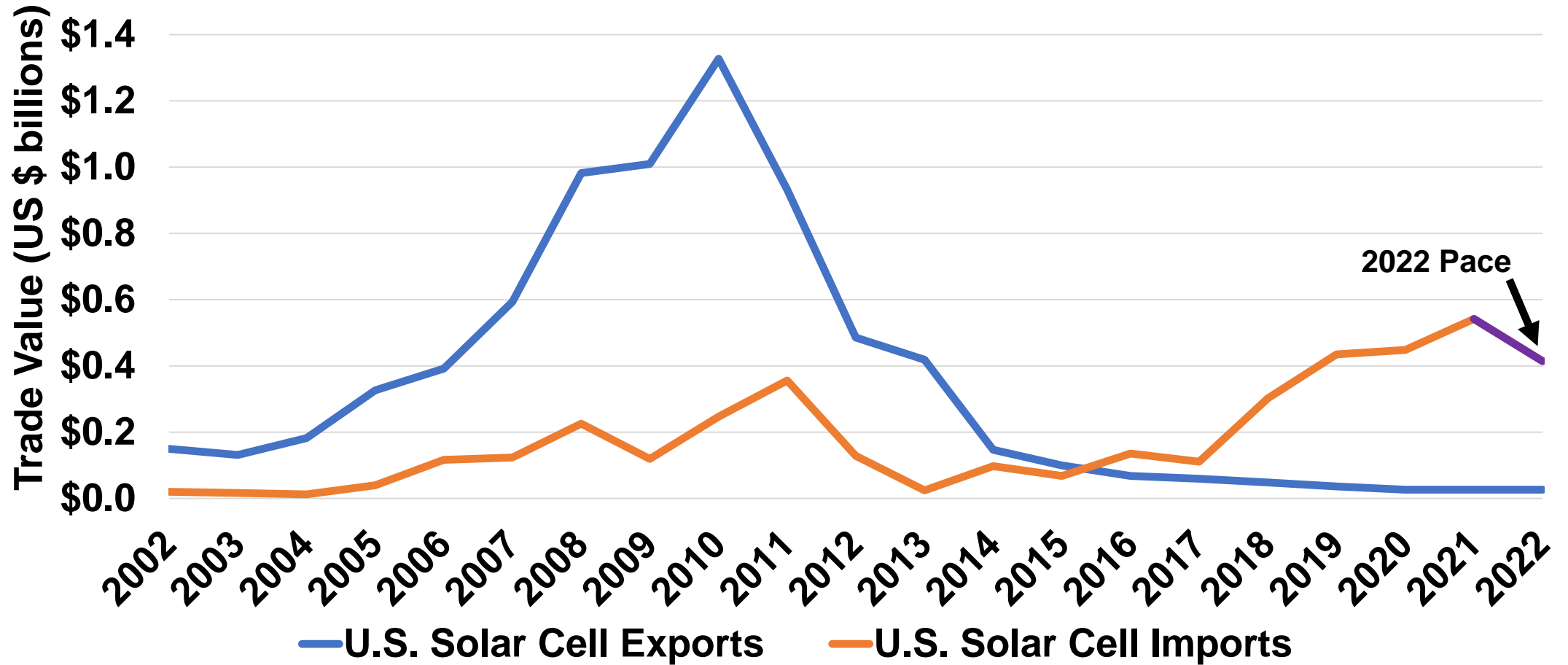
# Annual U.S. PV Panel Trade through February 2022



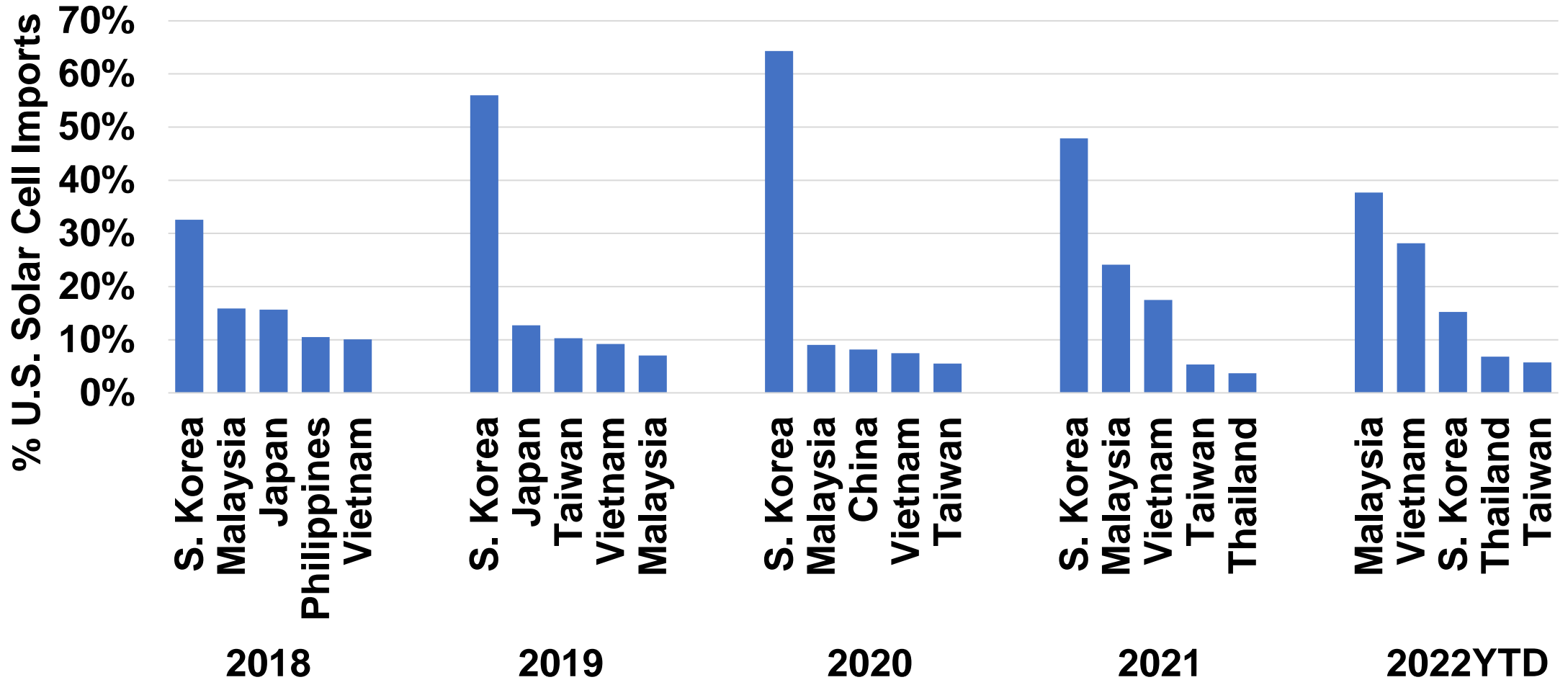
# Annual U.S. PV Panel Imports Rank Order of Countries through February 2022



# Annual U.S. PV Cell Trade through February 2022



# Annual U.S. PV Cell Imports Rank Order of Countries through February 2022

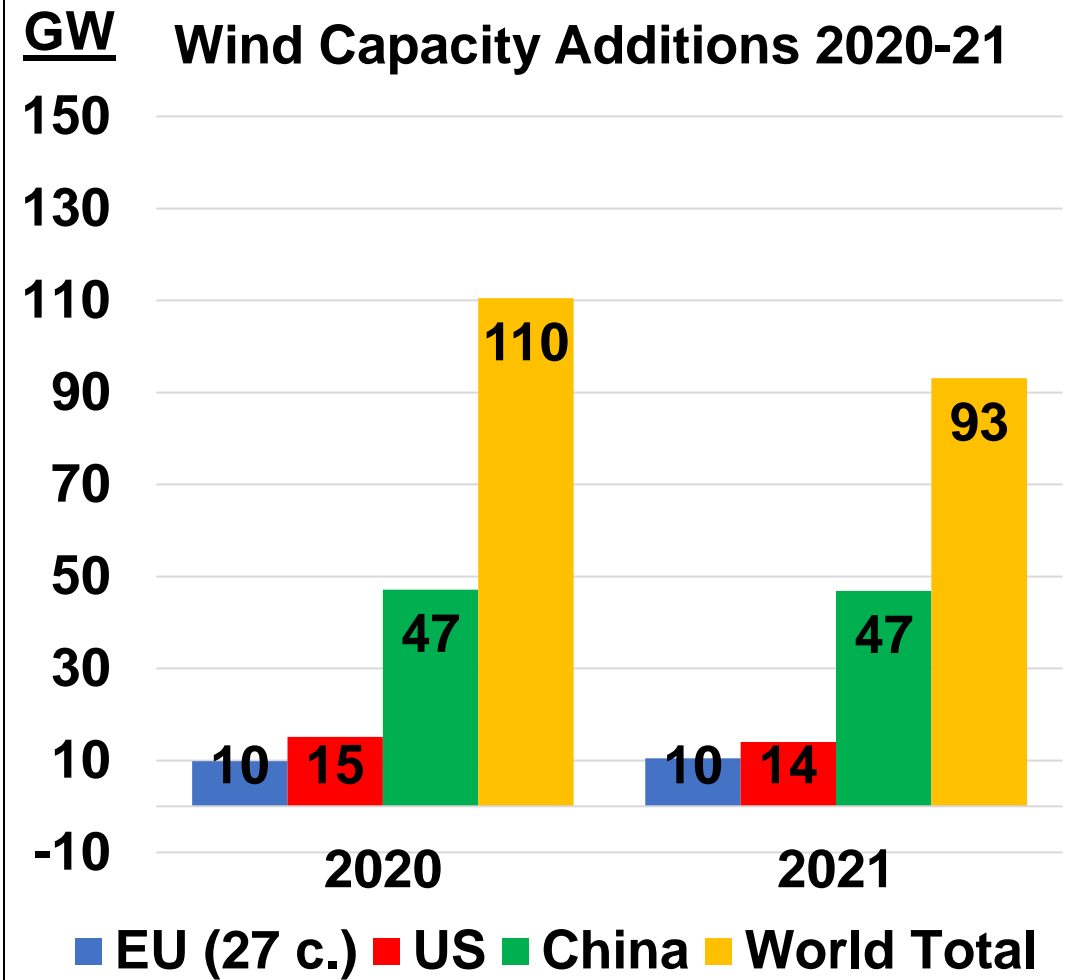
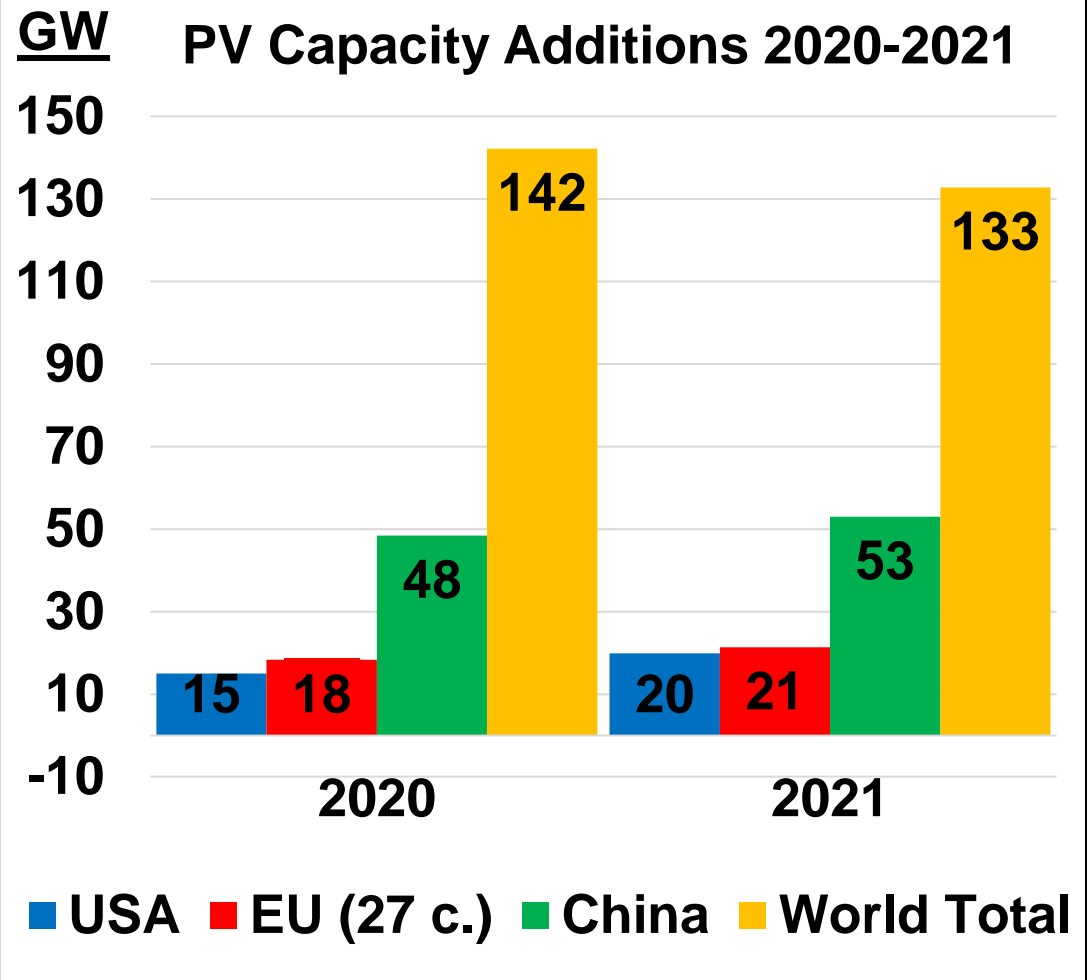






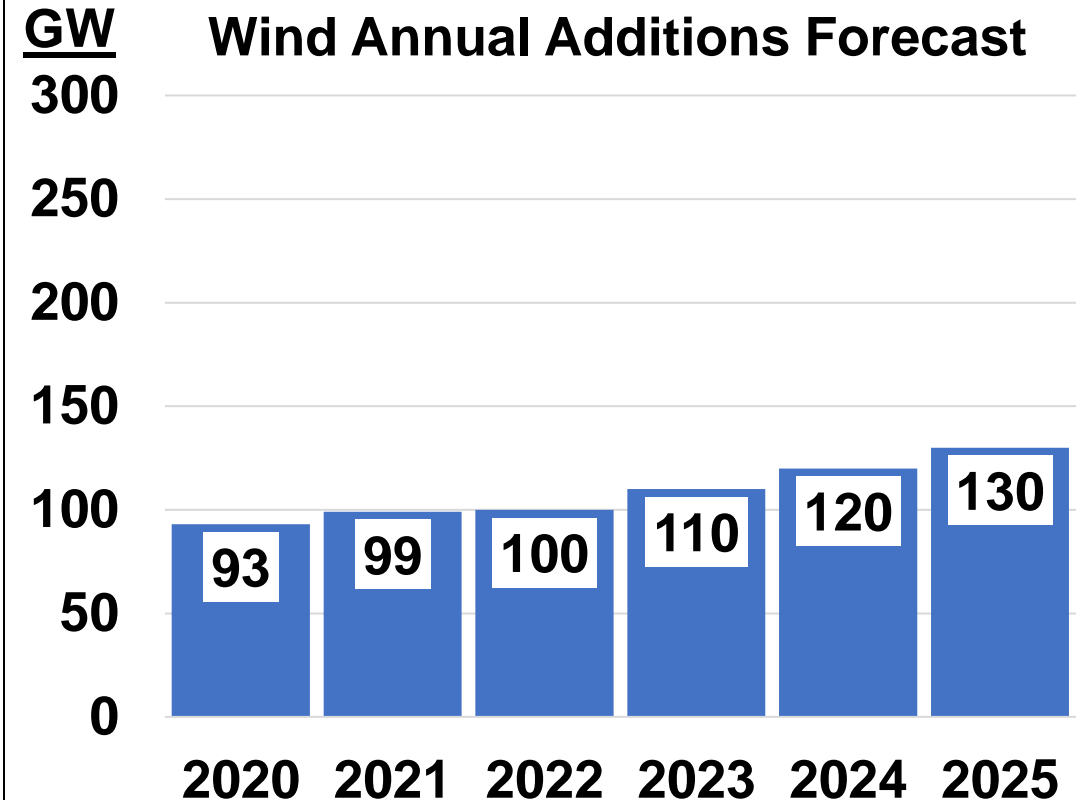
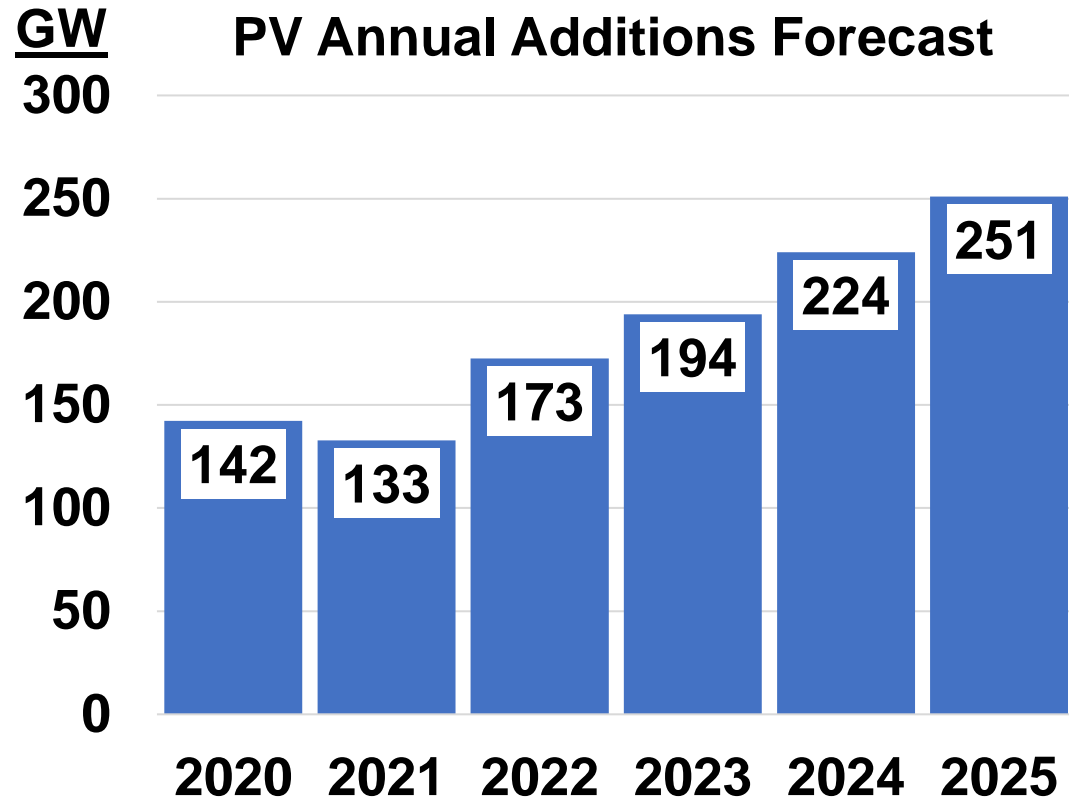
# World PV and Wind

# 2020-2021 World PV and Wind Capacity Additions

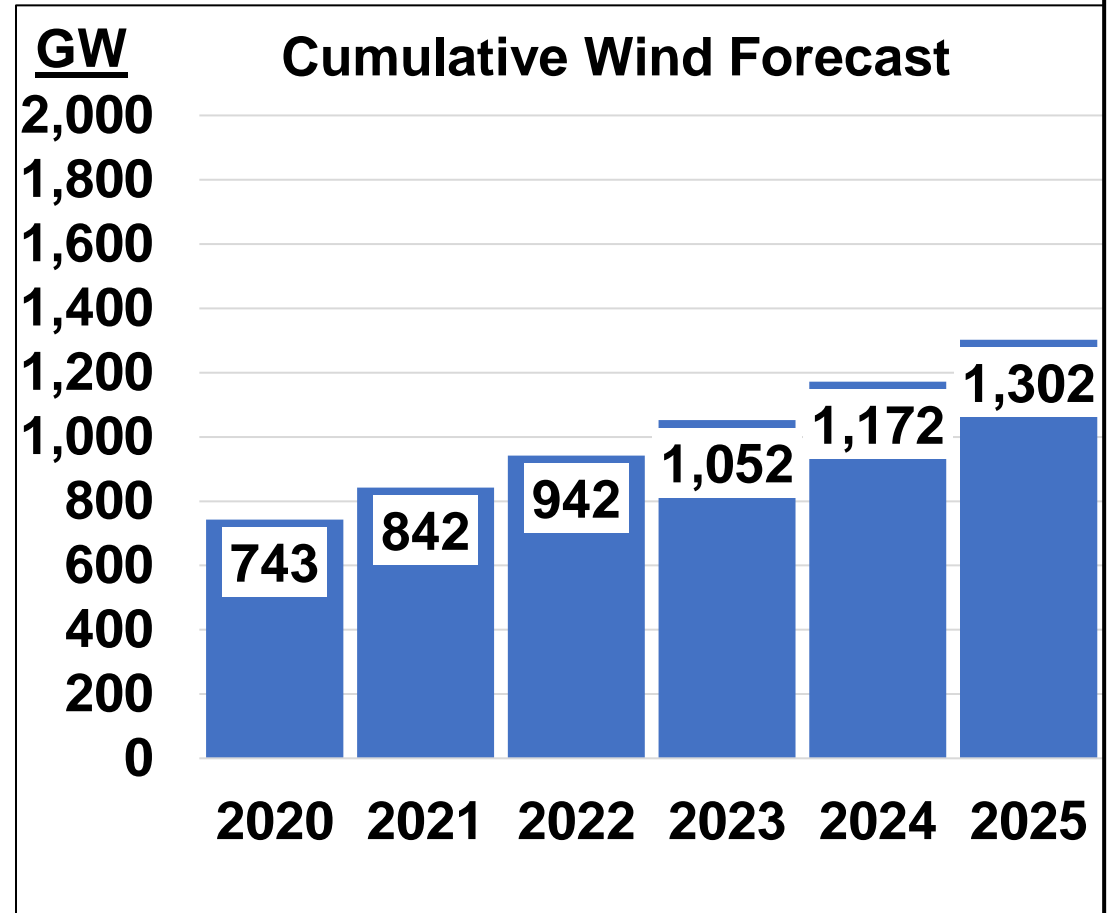
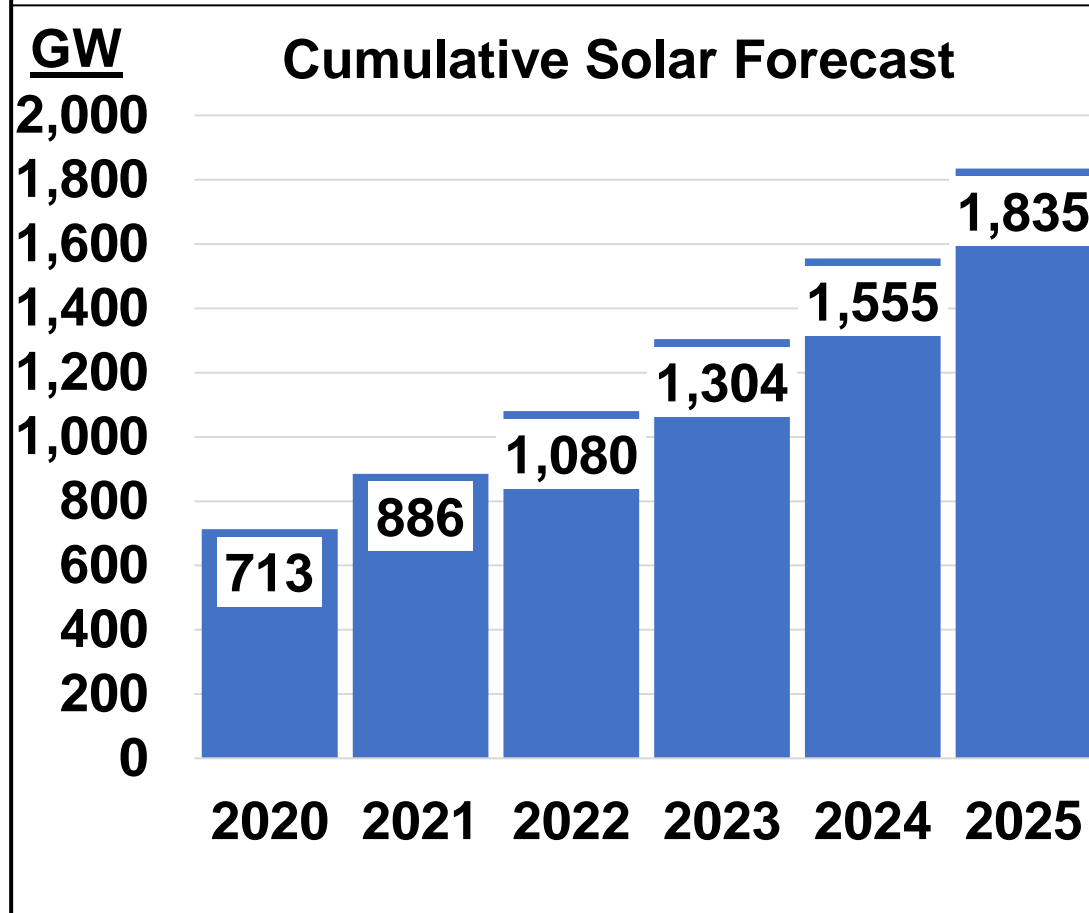


# World PV and Wind Annual Capacity Additions

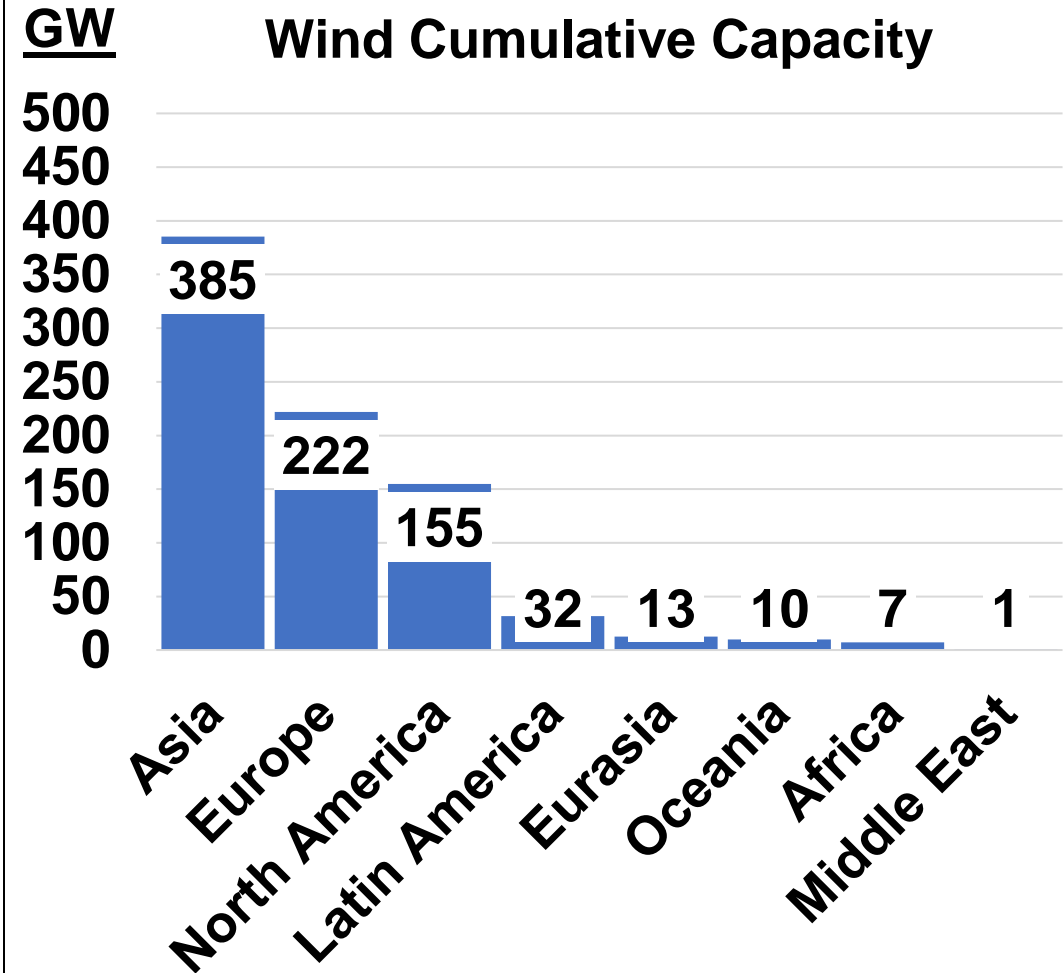
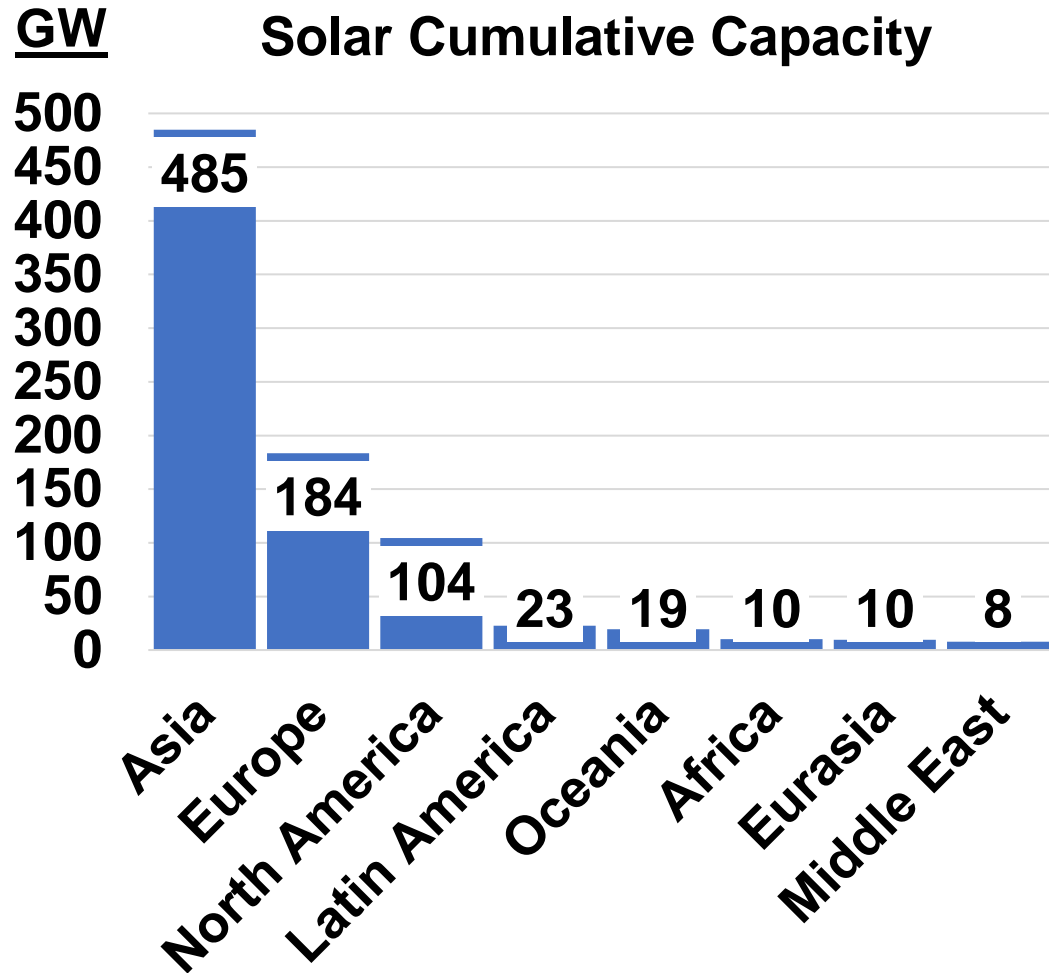
## Actual through 2021; Forecast 2022-2025



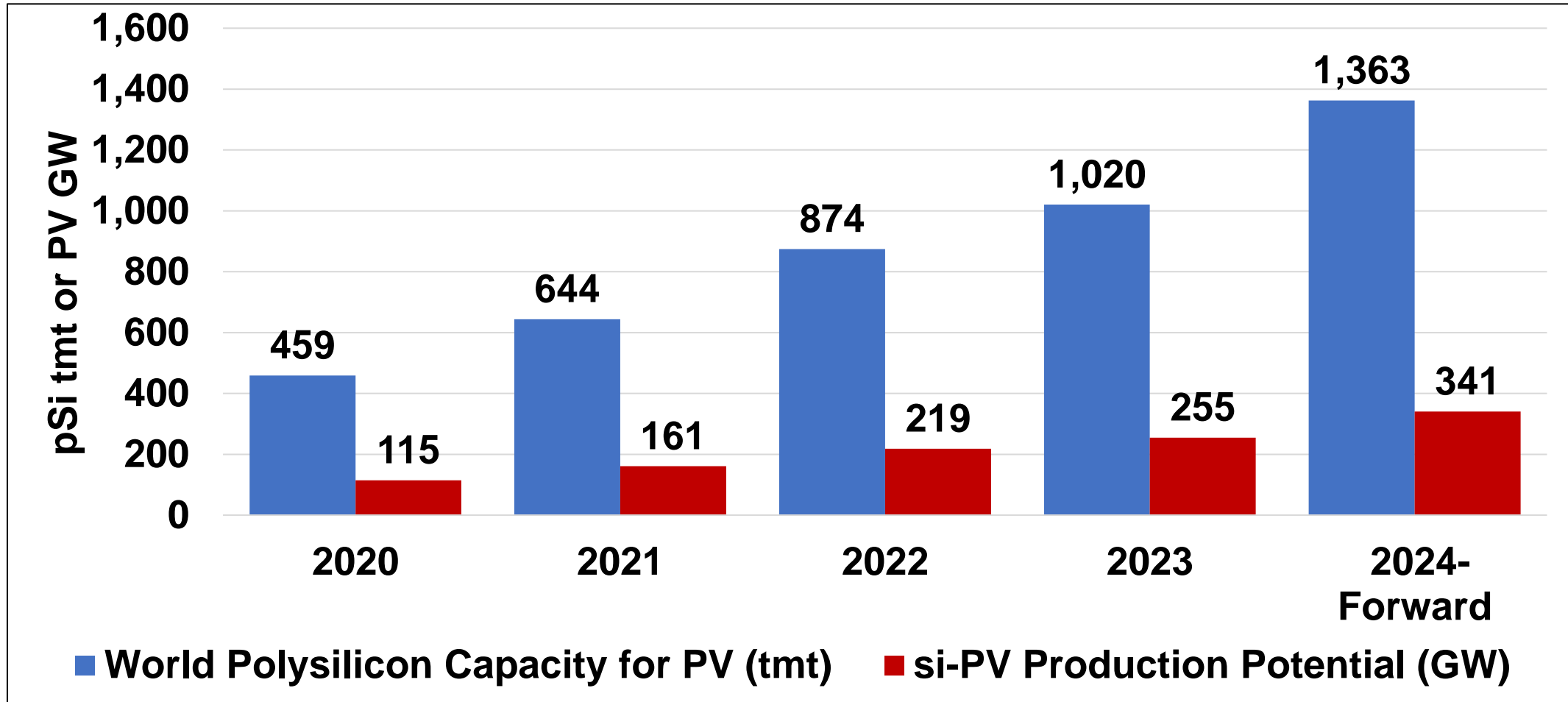
# World Solar and Wind Cumulative Capacity Actual through 2021; Forecast 2022-2025



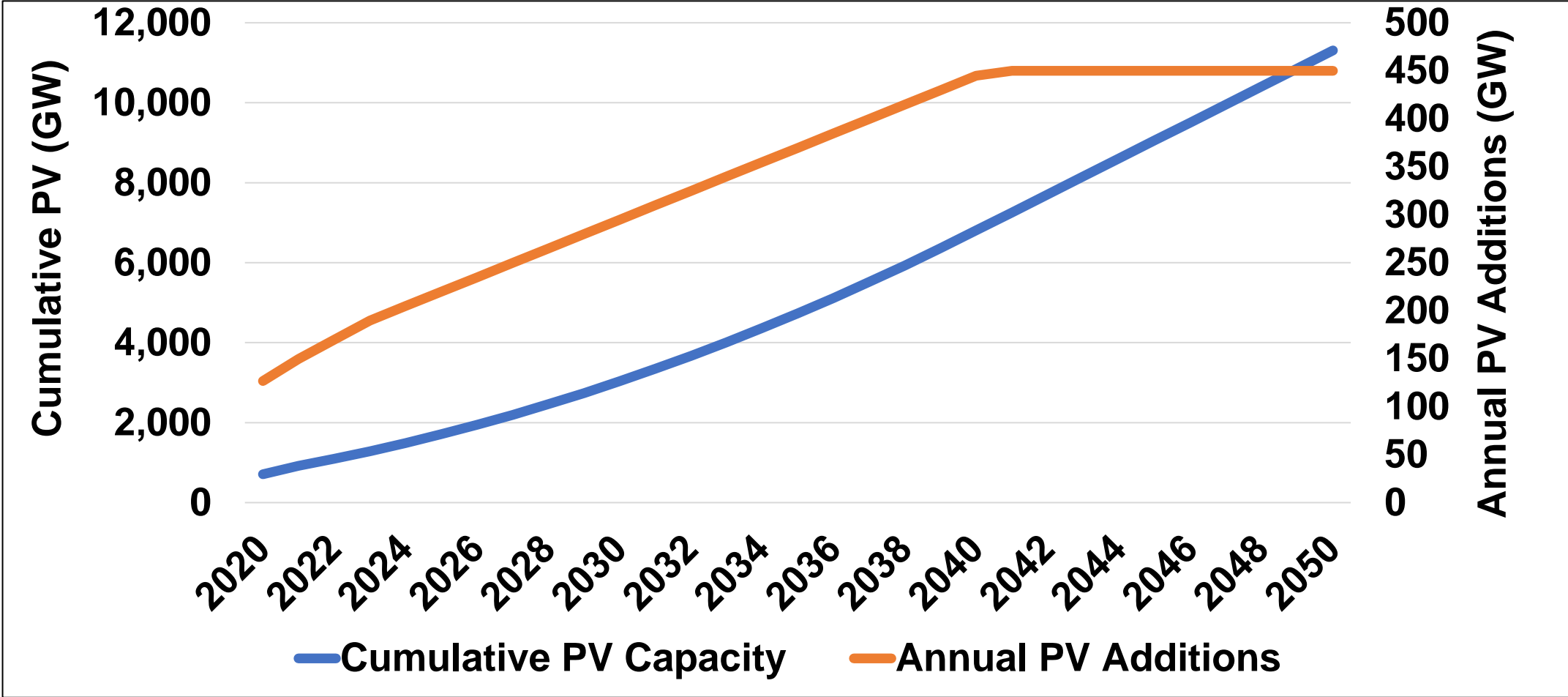
# 2021 World Regional Solar and Wind Cumulative Capacity



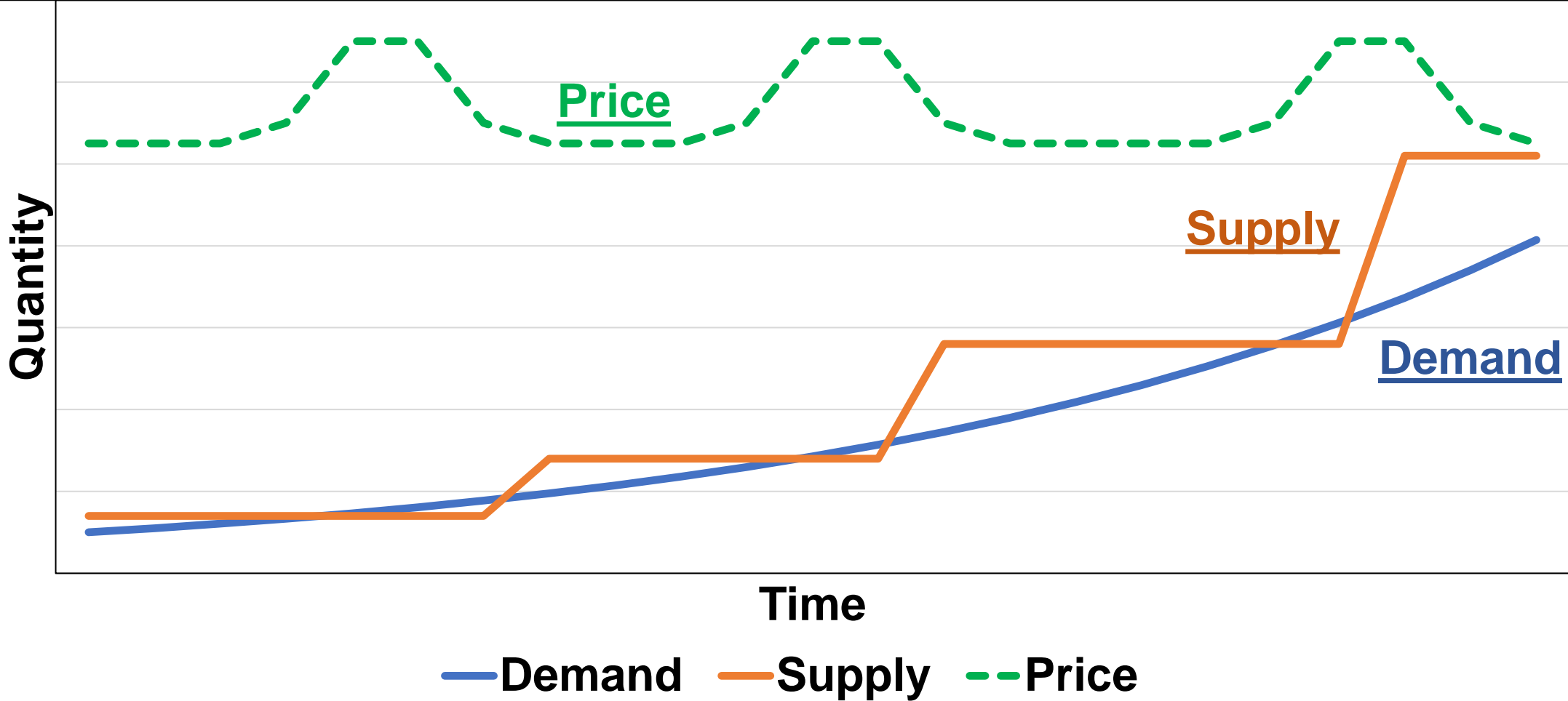
# Polysilicon Production and si-PV Module Production 2020 – 2024 Forward



# ASAP's World PV Forecast through 2050



# Figure 1. Silicon Supply, Demand and Price Cycles



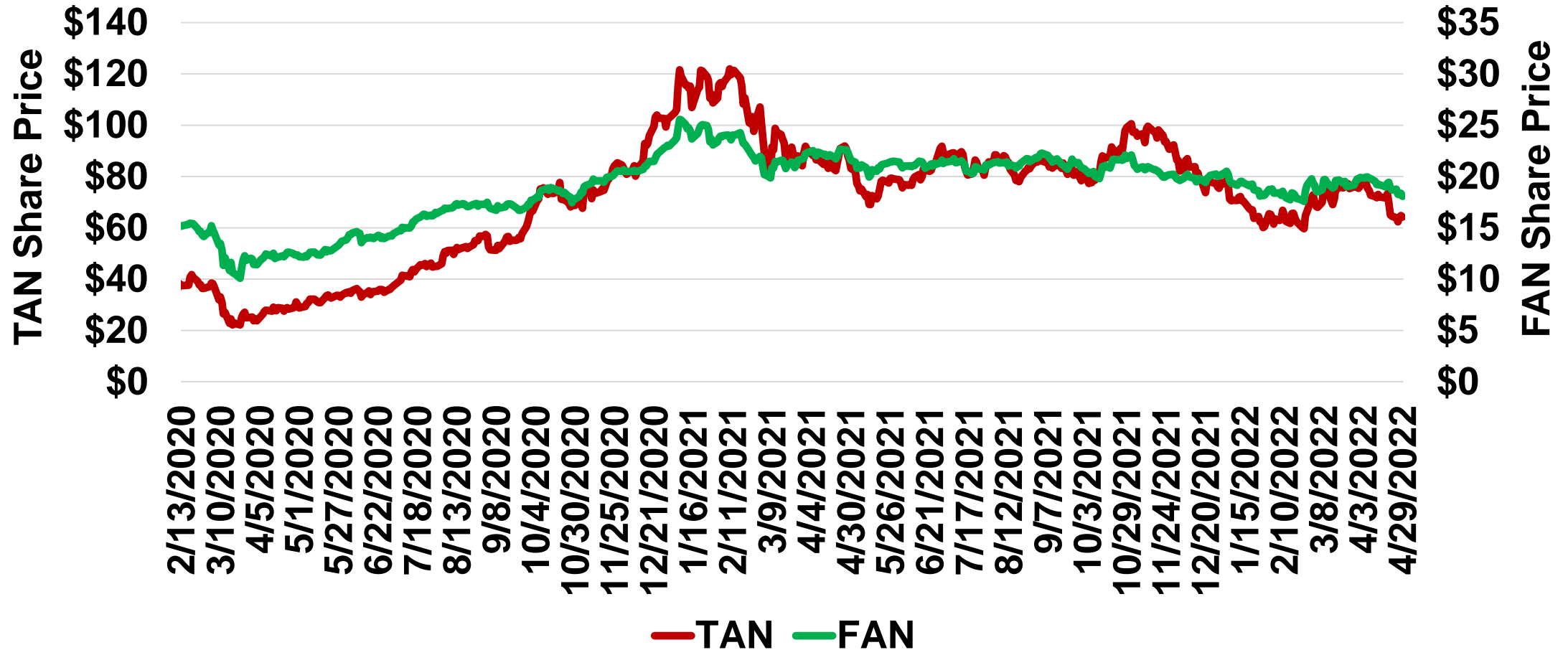




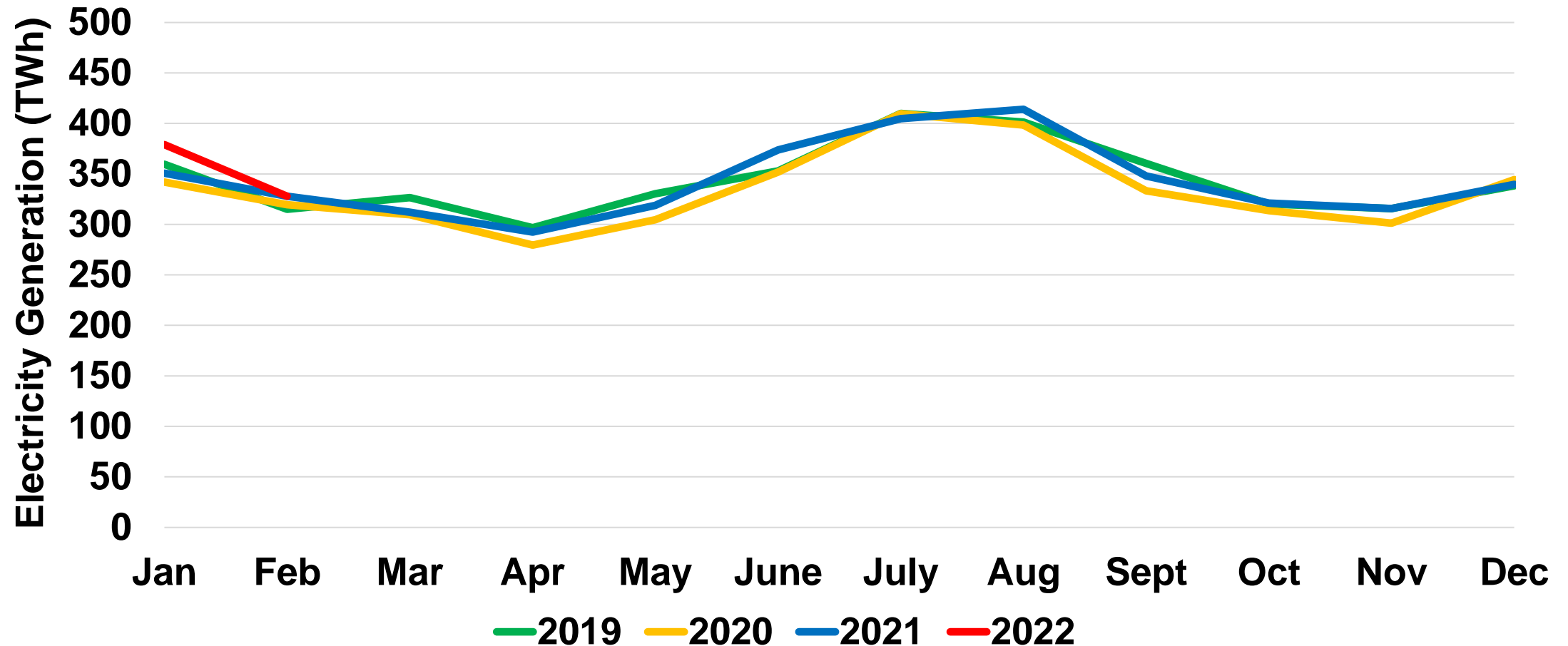
# **U.S. Electricity Market Overview**

**TAN and FAN Stock Prices**  
**Monthly Electricity Supply and Demand**  
**Electricity and Energy CO<sub>2</sub> Emissions**

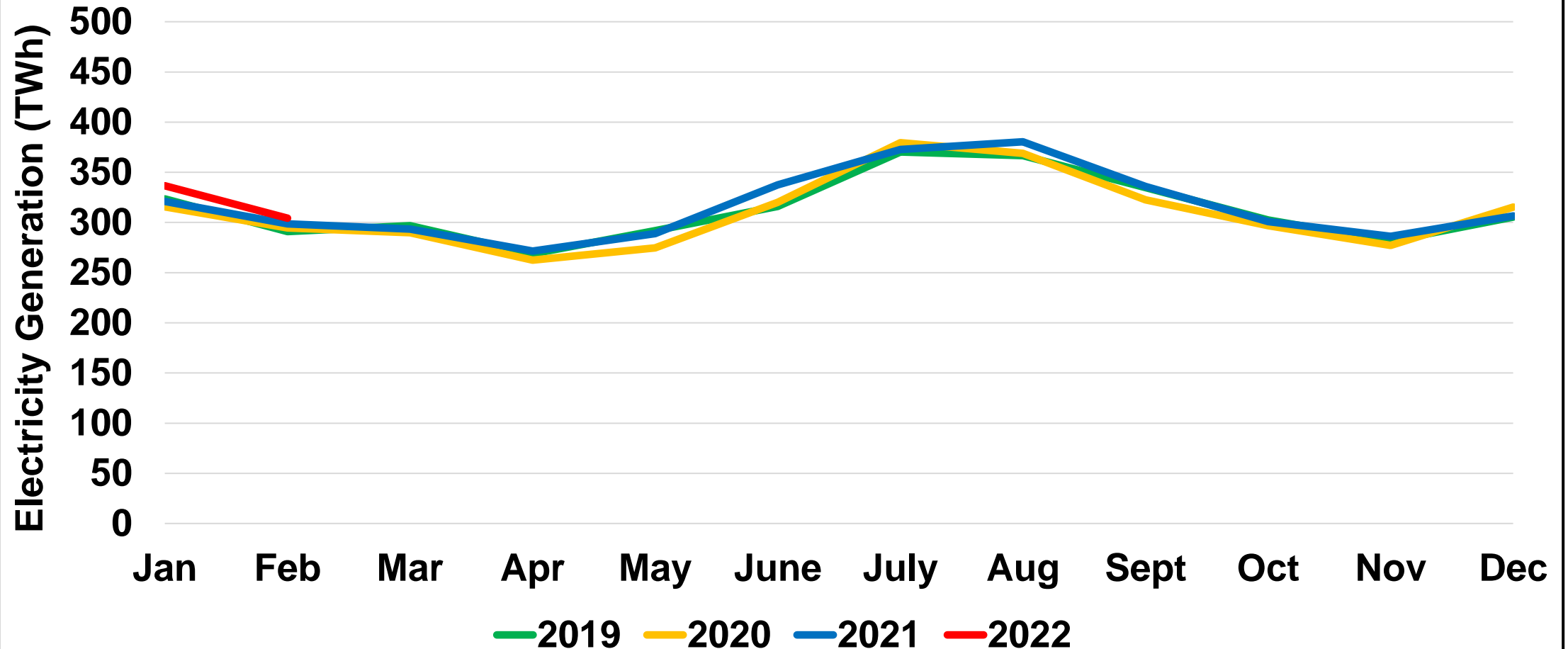
# TAN (Solar) and FAN (Wind) ETF Share Prices (Adjusted Close Prices through April 30, 2022)



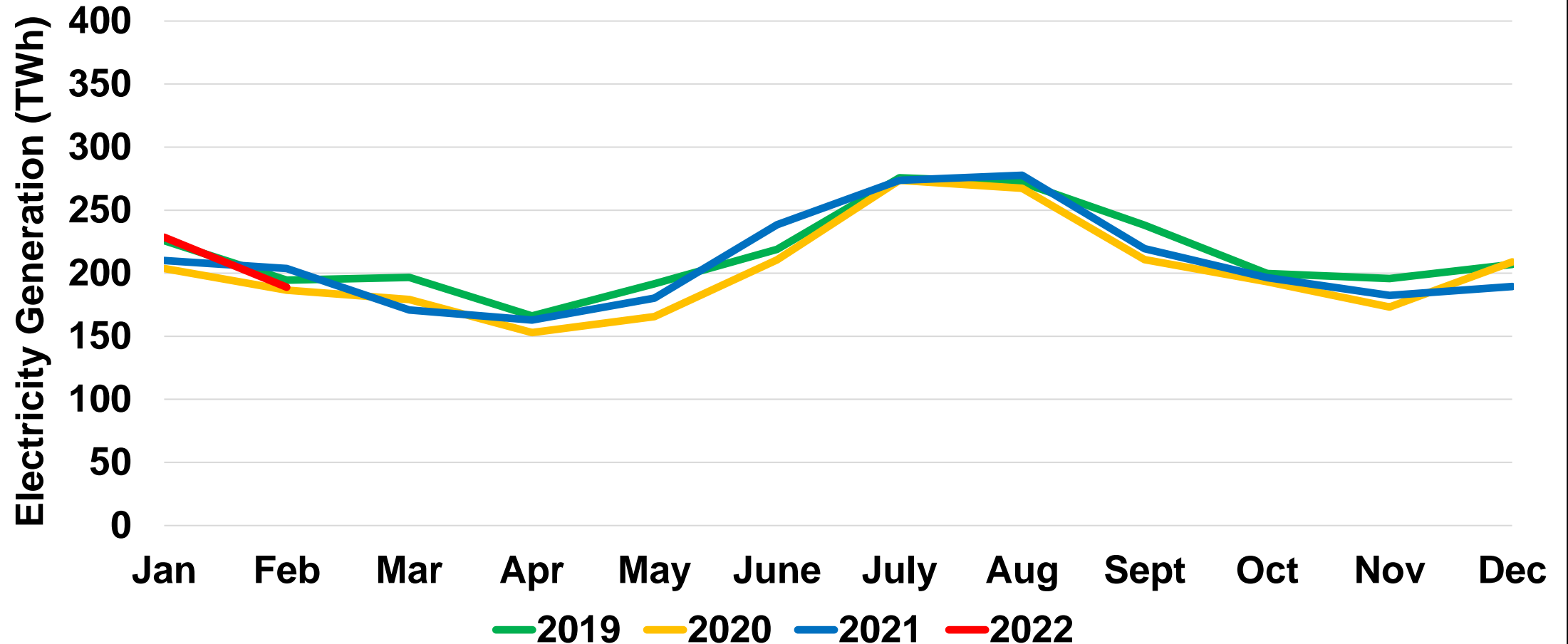
# U.S. Total Electricity Generation Year-on-Year (through February 2022)



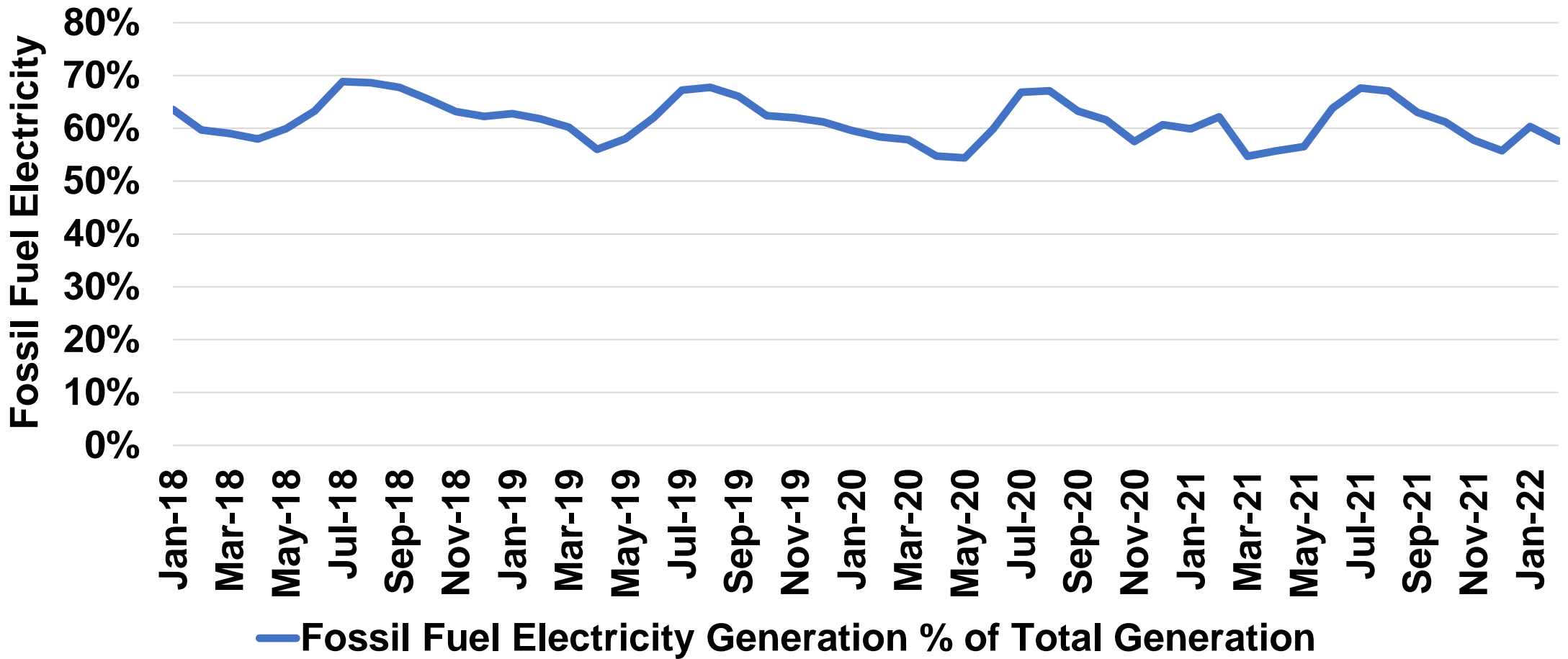
# U.S. Total Electricity Demand (Retail Sales) Year-on-Year (through February 2022)



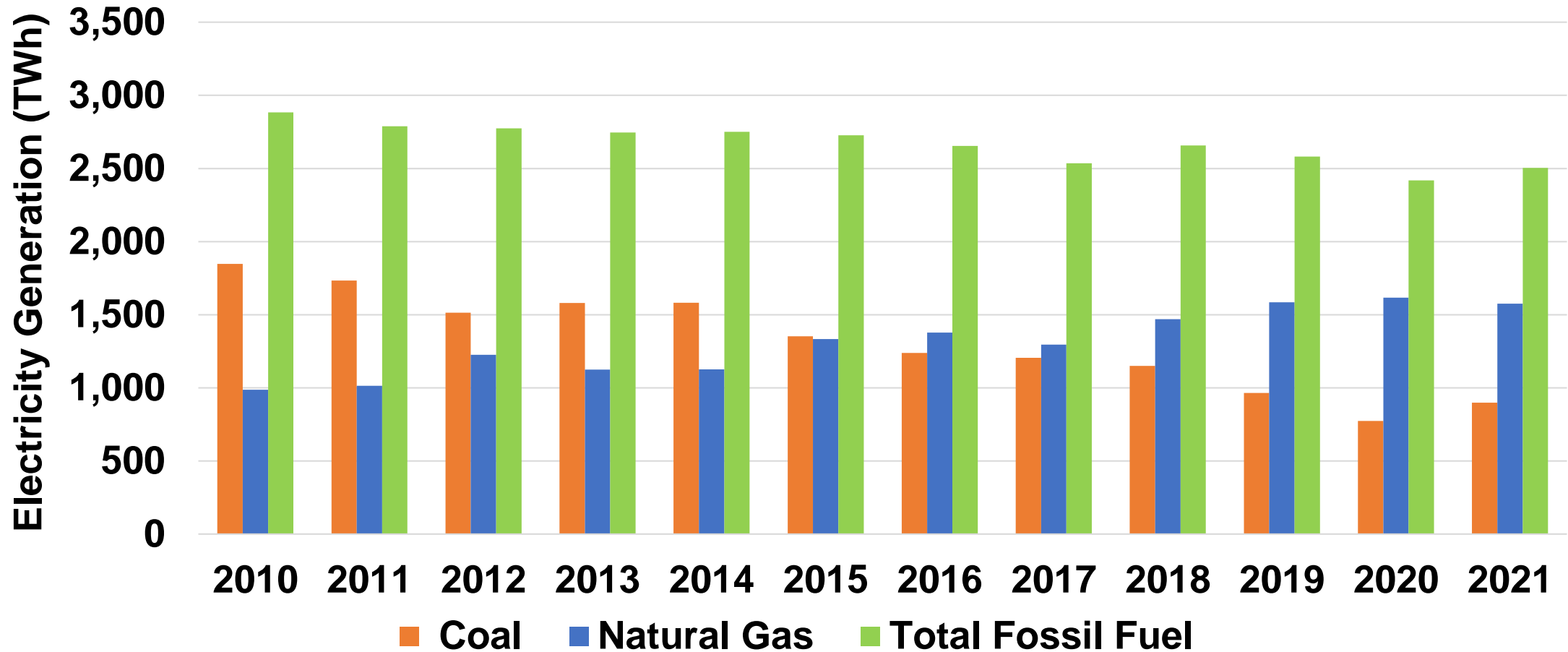
# U.S. Fossil Fuel Electricity Generation Year-on-Year (through February 2022)



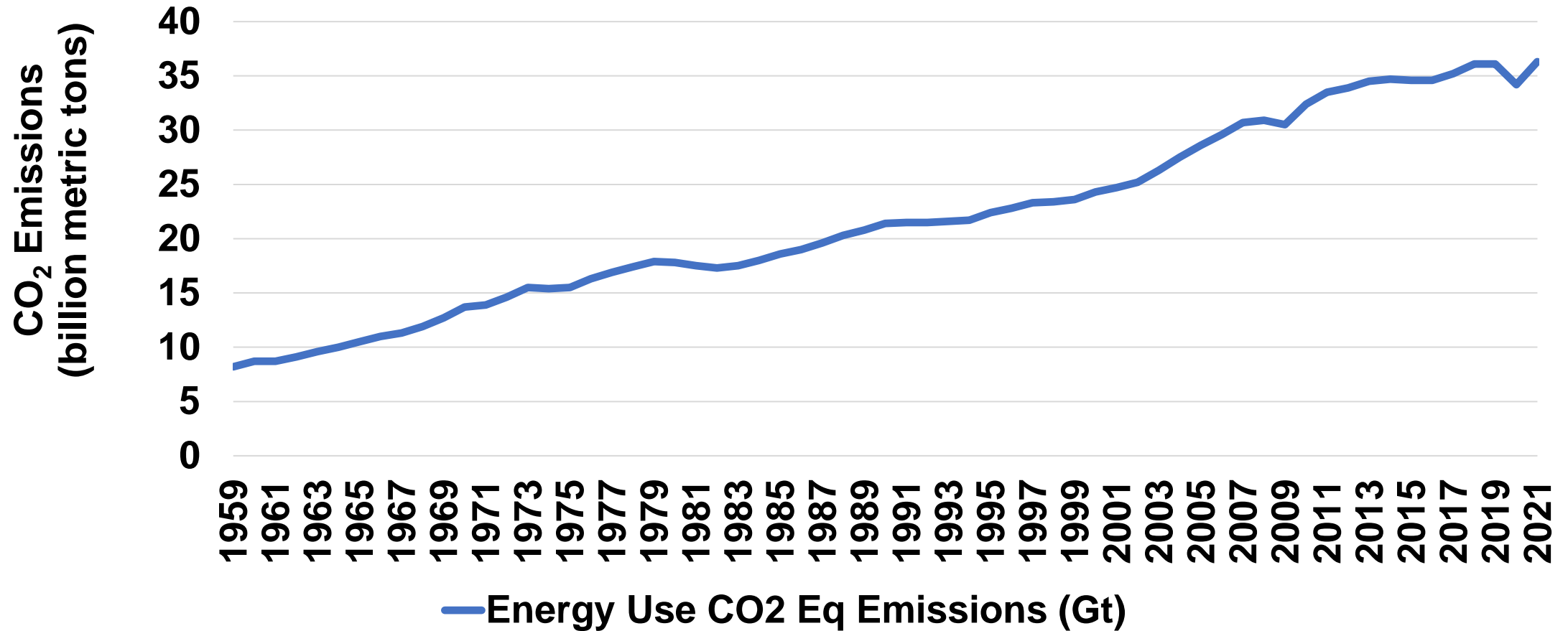
# U.S. Fossil Fuel Electricity Generation % of Generation through February 2022



# U.S. Annual Fossil Fuel Electricity Generation (2010-2021)

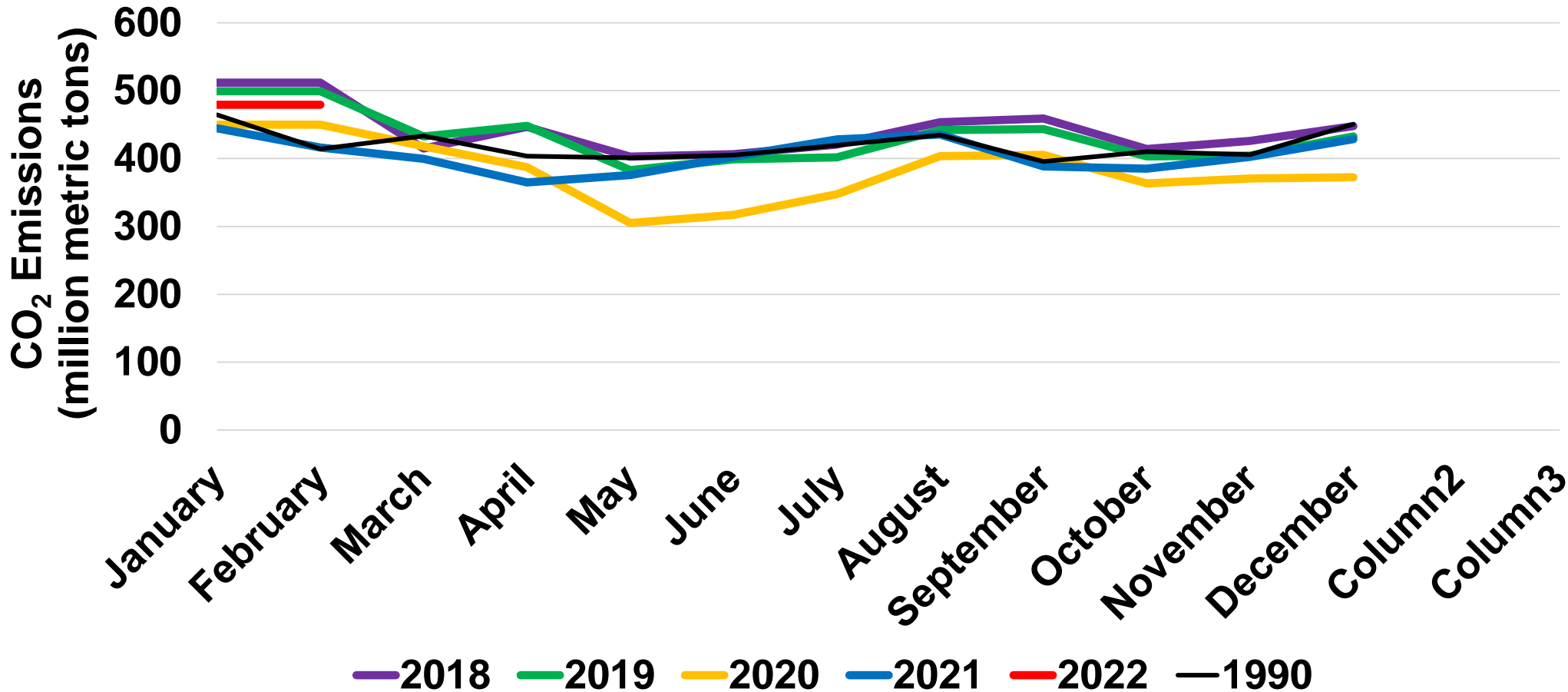


# World Energy Use CO<sub>2</sub> Equivalent Emissions (1959-2021)

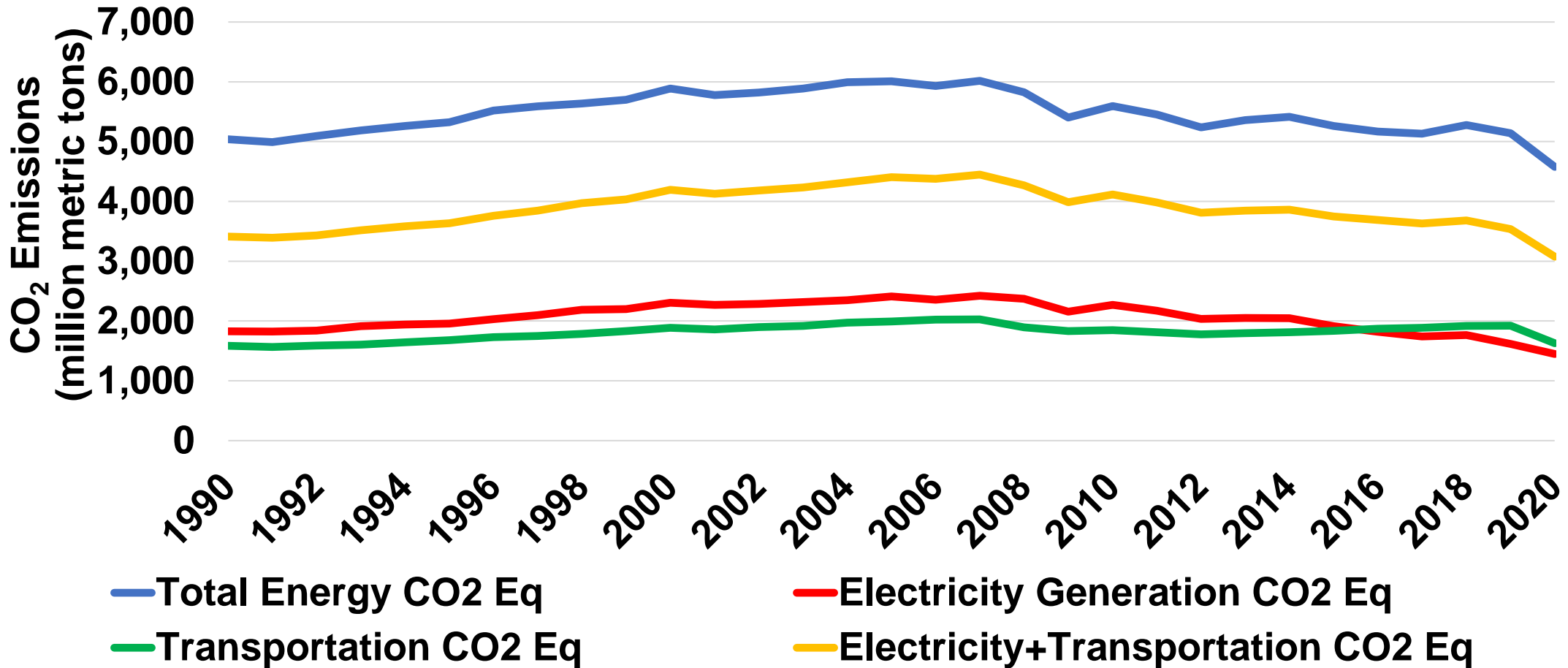




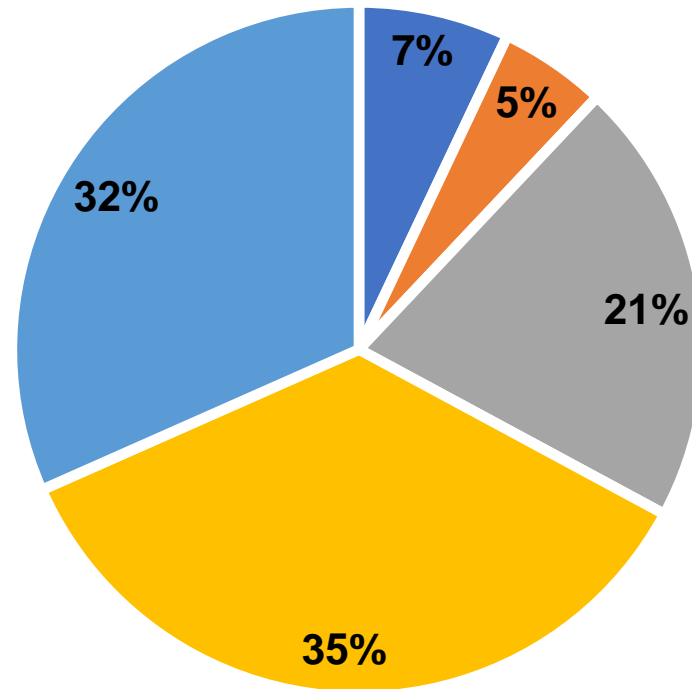
# U.S. Monthly Energy Use CO<sub>2</sub> Equivalent Emissions (through January 2022)



# U.S. Fossil Fuel CO<sub>2</sub> Equivalent Emissions (1990-2020)



# U.S. Energy CO<sub>2</sub> Emissions by Sector (2020)



■ Residential ■ Commercial ■ Industrial ■ Transportation ■ Electric Power

# ASAP Regional Map

