

# AEO2020: Alternative Policies – Varying Residential Solar Photovoltaic Utility Rate Structure



---

*For*

*Resources for the Future*

*March 5, 2020 | Washington, DC*

*By*

*Erin Boedecker, Team Lead*

*Buildings Energy Consumption & Efficiency Analysis*

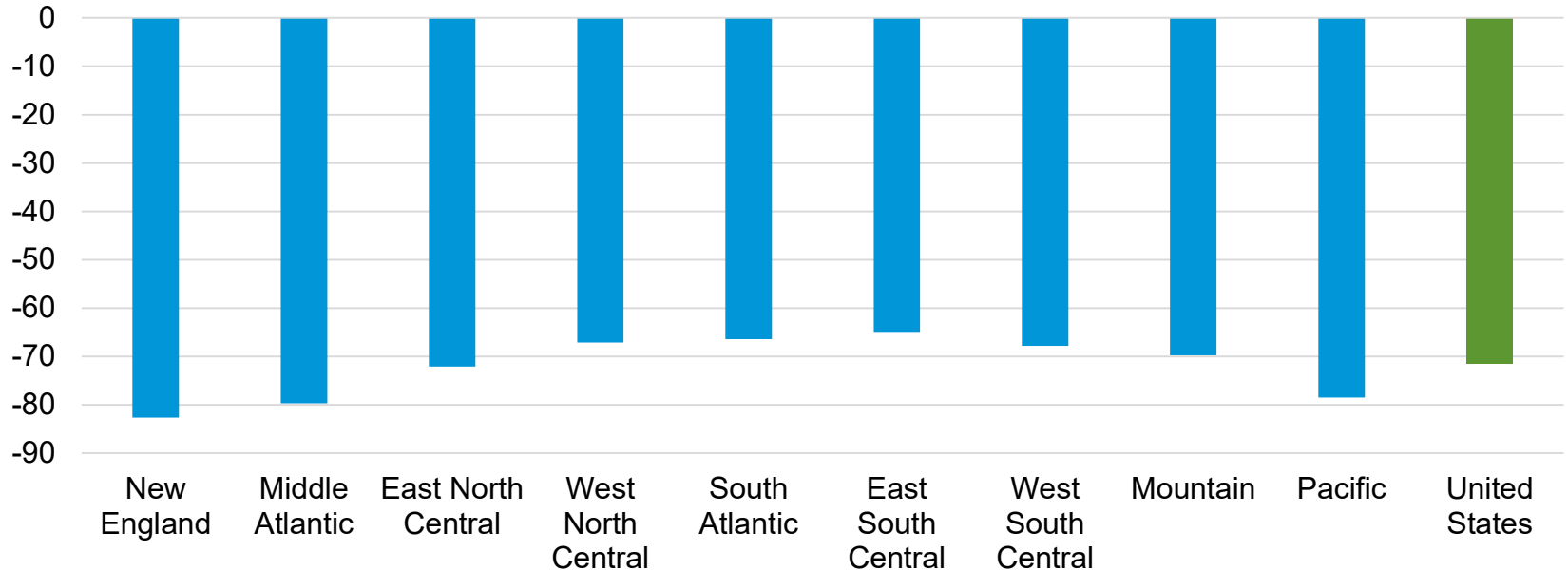
## Alternative assumptions affect residential PV adoption in AEO2020

- In the AEO2020, EIA assumes generation from residential solar photovoltaic (PV) systems displaces purchased electricity and excess is sold to the grid at the retail rate
- By contrast, alternative utility rate structure cases value *all* residential PV generation at the wholesale price of electricity
- The alternative rate cases explore the range of impacts that changes in net metering policy might have on residential solar PV adoption

# Wholesale electricity rates are often significantly lower than residential retail electricity rates

## Wholesale electricity rate relative to residential retail rate by census division, 2050

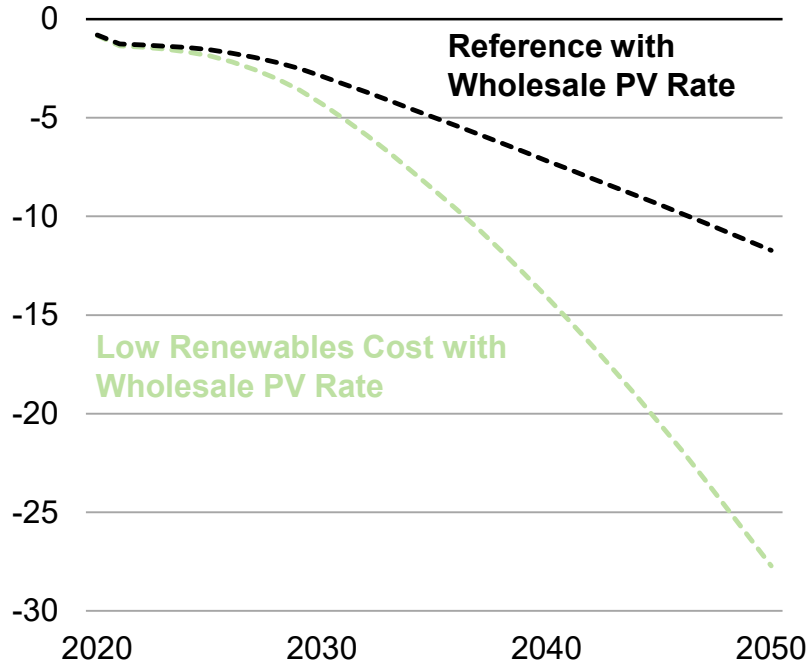
percentage difference



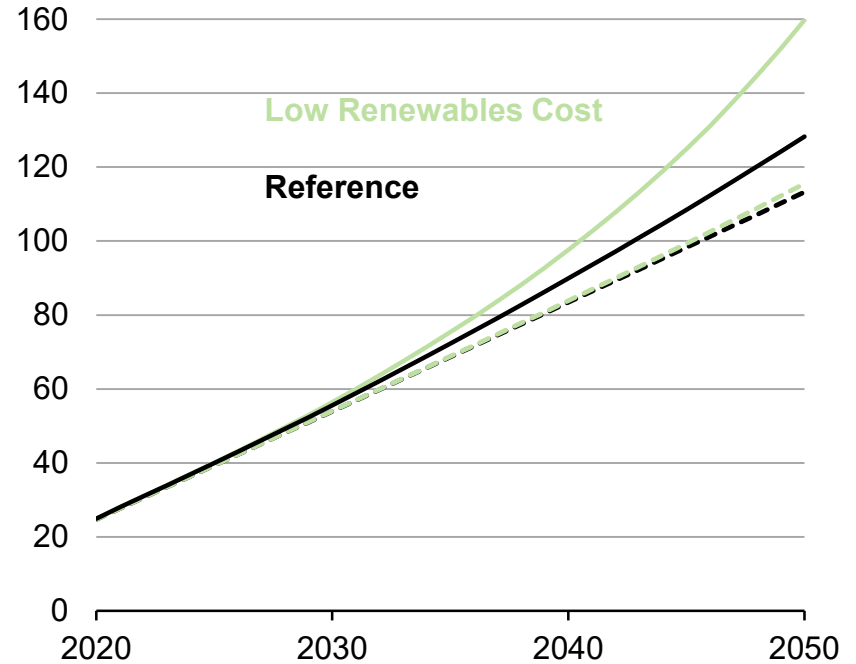
Source: U.S. Energy Information Administration, Annual Energy Outlook 2020, Reference with Wholesale PV Rate case

# Impact of wholesale versus retail PV rates

**Change in residential solar PV generation**  
percentage change from analogous base case



**Residential solar PV generation in select cases**  
billion kilowatthours

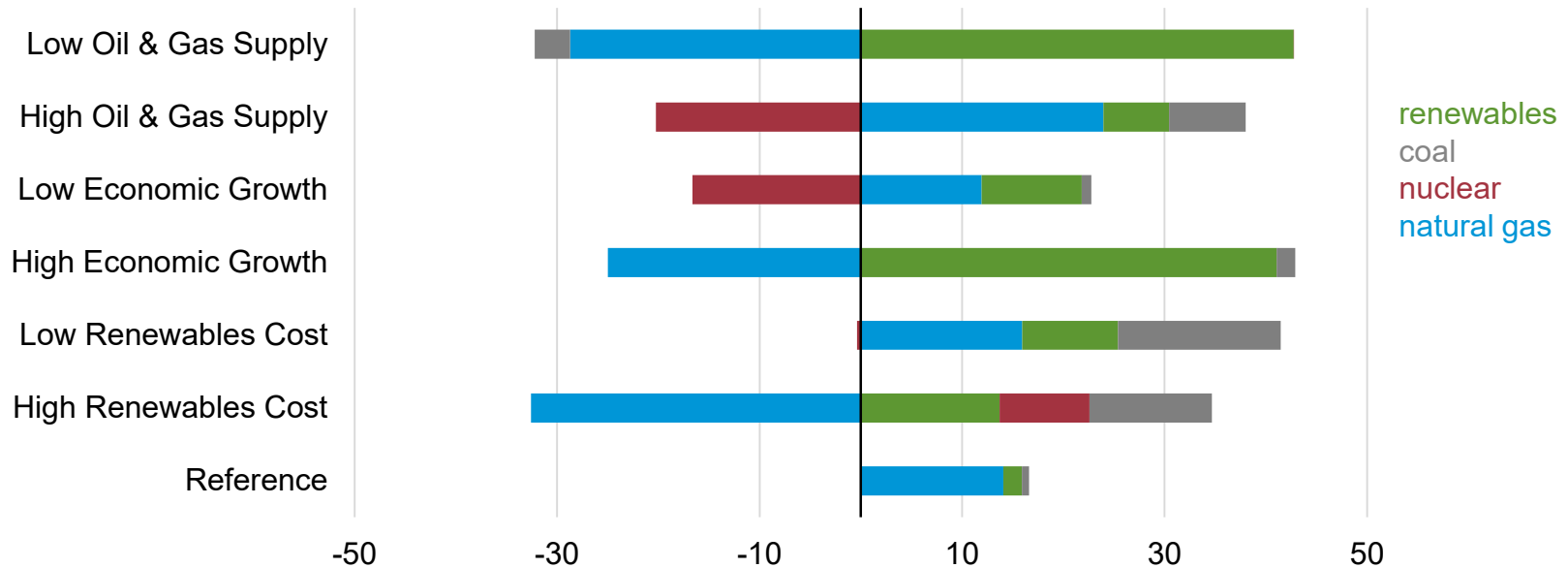


Source: U.S. Energy Information Administration, Annual Energy Outlook 2020

# Power sector generation increases when using wholesale rates and is supplied by a variety of sources

## Change from analogous base case, power sector generation by source, 2050

billion kilowatthours



Source: U.S. Energy Information Administration, Annual Energy Outlook 2020

## Contact information – Buildings Energy Consumption & Efficiency Analysis Team

- Erin Boedecker, Team Leader, [Erin.Boedecker@eia.gov](mailto:Erin.Boedecker@eia.gov), (202) 586-4791
- Meera Fickling, [Meera.Fickling@eia.gov](mailto:Meera.Fickling@eia.gov), (571) 241-7860
- Behjat Hojjati, [Behjat.Hojjati@eia.gov](mailto:Behjat.Hojjati@eia.gov), (202) 586-1068
- Kevin Jarzomski, [Kevin.Jarzomski@eia.gov](mailto:Kevin.Jarzomski@eia.gov), (202) 586-3208
- Courtney Sourmehi, [Courtney.Sourmehi@eia.gov](mailto:Courtney.Sourmehi@eia.gov), (202) 586-0022

## For more information

U.S. Energy Information Administration homepage | [www.eia.gov](http://www.eia.gov)

Annual Energy Outlook | [www.eia.gov/aeo](http://www.eia.gov/aeo)

Short-Term Energy Outlook | [www.eia.gov/steo](http://www.eia.gov/steo)

International Energy Outlook | [www.eia.gov/outlooks/ieo/](http://www.eia.gov/outlooks/ieo/)

Monthly Energy Review | [www.eia.gov/mer](http://www.eia.gov/mer)

Today in Energy | [www.eia.gov/todayinenergy](http://www.eia.gov/todayinenergy)