

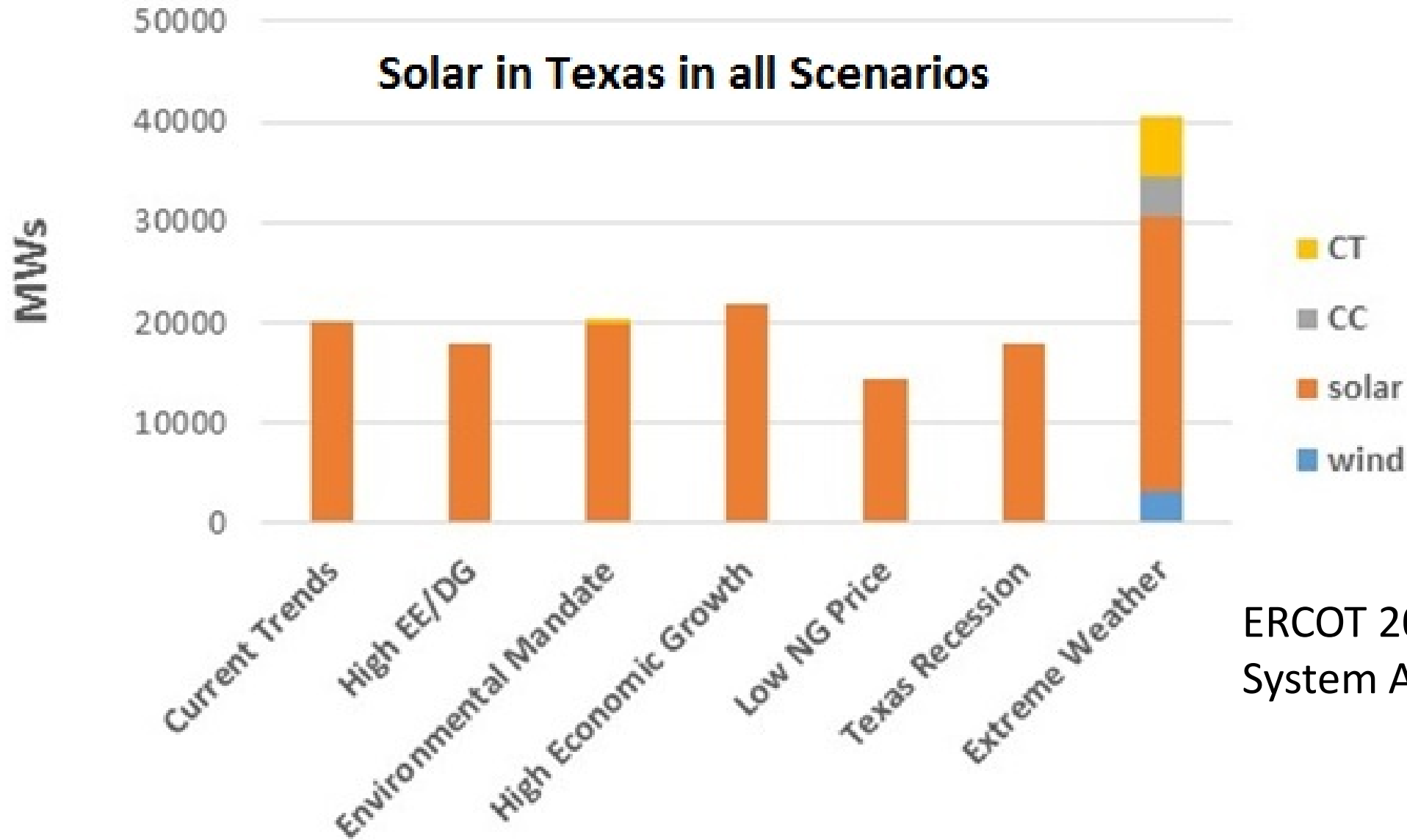
Which Energy Technologies Are Vital For 100% CO2-free as Intermittent Renewables Increase

Mike Jacobs

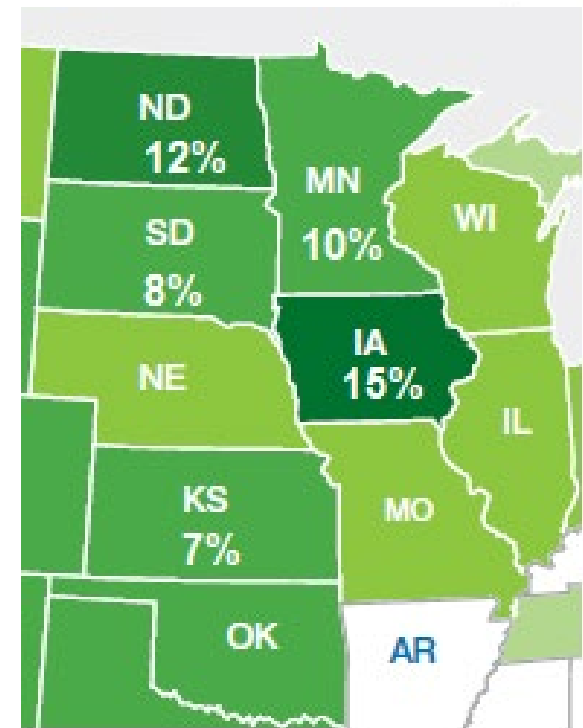
Union of Concerned Scientists

February 2019

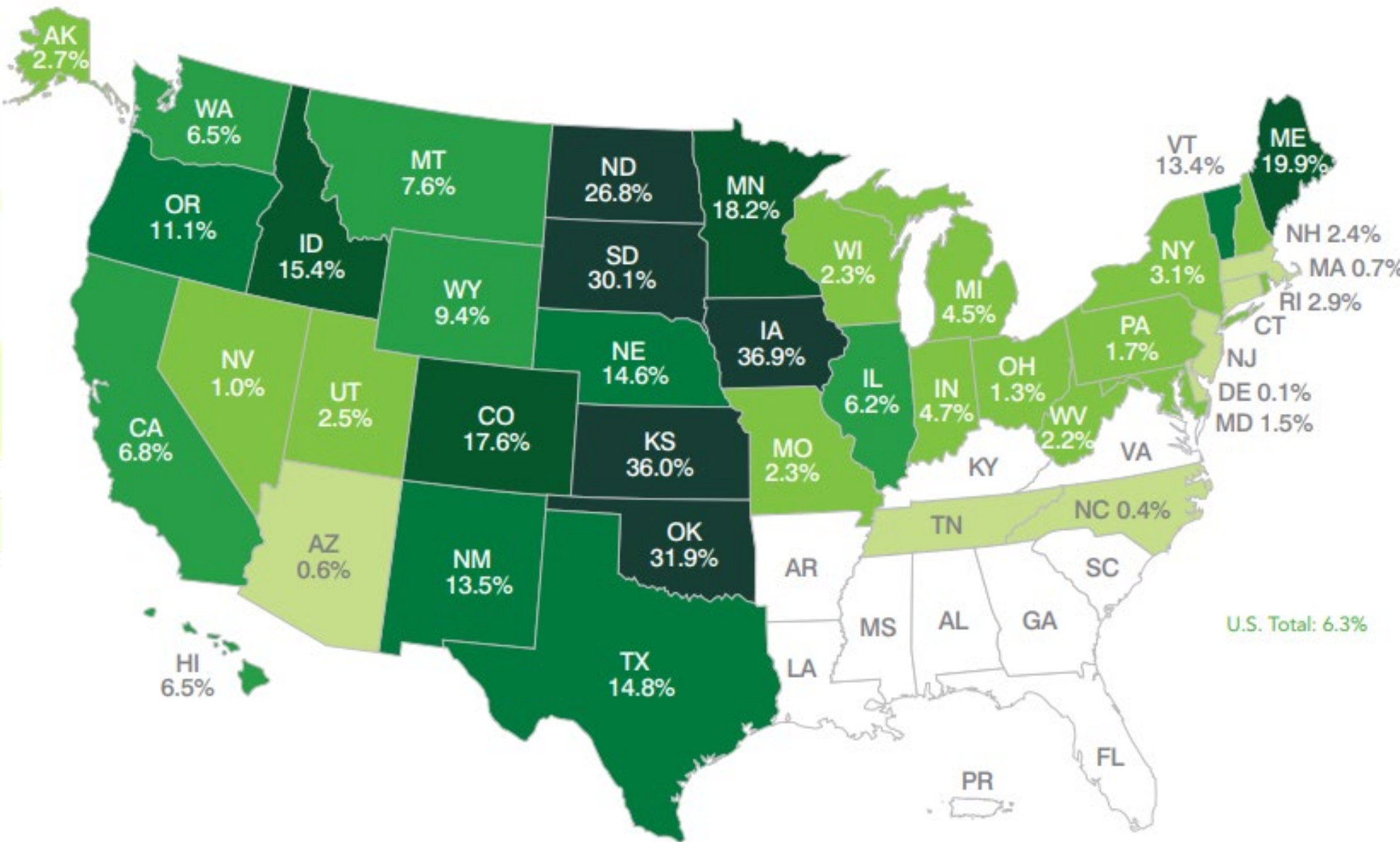
Solar in Texas in all Scenarios



ERCOT 2016 Long Term System Assessment



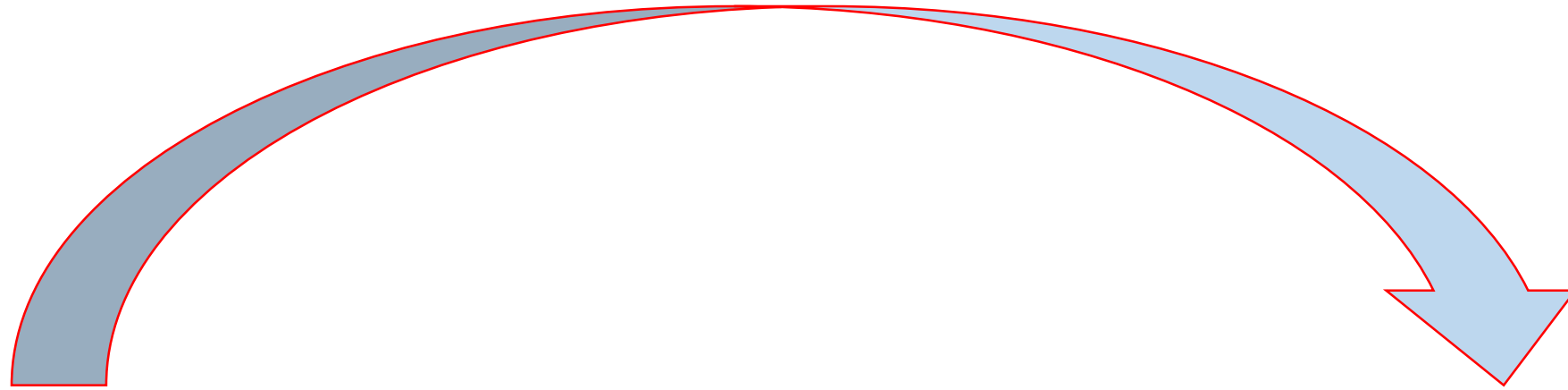
Top 5 wind share in 2010



Year-end 2017 wind share of state generation

<https://www.awea.org/market-reports>

Storage deployments displacing generation



2009 Reserves

Chile, Hawaii

2012 Freq. Reg.

PJM, NY, NE

2016 Peak Plant

California