



Net-Zero 2050: U.S. Economy-Wide Deep Decarbonization Scenario Analysis

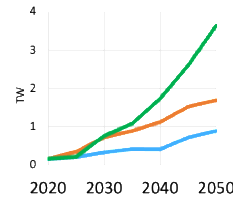
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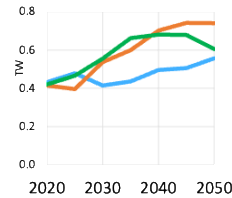
U.S. Technology Trends over Time to Net-Zero in 2050

- There is no on-size-fits-all solution; viable strategies will differ by region
- Many different technologies will be needed to support decarbonization
- Technology deployment (types & timelines) impacted by complex energy system scenarios

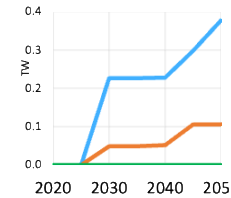
Wind and Solar



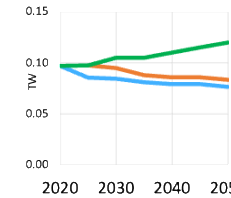
Gas Power (no CCS)



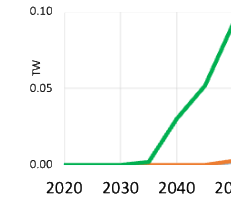
Gas Power (w/ CCS)



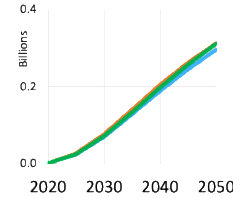
Nuclear



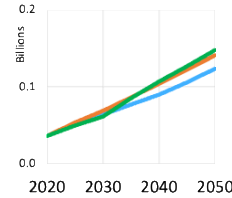
Hydrogen Power



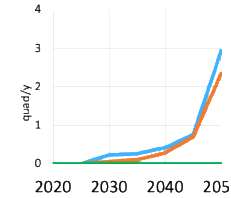
Electric Vehicles



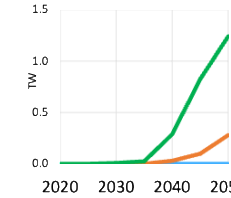
Heat Pumps



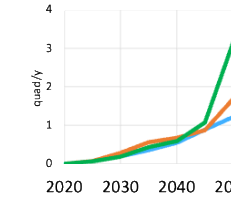
Hydrogen, SMR w/CCS



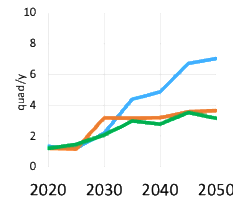
Electrolysis



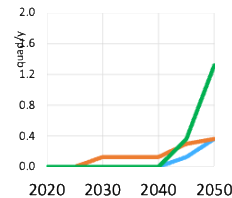
Hydrogen End-Use



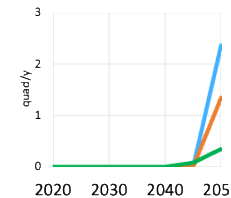
Bio-liquids



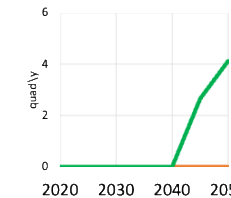
RNG



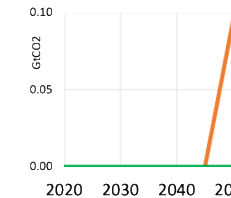
Hydrogen Blending



Synthetic Fuels



Direct Air Capture



U.S. 2050
Net Zero
Scenarios



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