Humanity is not yet transitioning to a zero-emission energy system

Share of total primary energy supply by fuel type

Source: International Energy Agency World Energy Balances 2018

Zero-emission build just keeping pace with global energy demand increase
DOE National Laboratories Relationship to Universities and Industry in the Energy Innovation System

Level of Engagement

- Technology Maturation

- DOE National Labs

- Universities

- Industry

- Commercialization

- Demonstration

- System Testing

- Development

- Discovery

- Concept identified/proven at laboratory-scale
CO₂ Emissions from Fuel Combustion (2017)

- 41% Electricity & Heat Generation
- 25% Transportation
- 24% Industry
- 8% Buildings
- 2% Other