



TRBA SUMMIT 2024
OKLAHOMA'S NEW ENERGY ECONOMY



Standing on the Shoulders of Giants: Creating a New Energy Innovation Hub

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Phillips 66

Pioneers in Technology



Phillips Petroleum R&D Center, Bartlesville
circa 1950s



Conoco, Inc., Research Lab, Ponca City
circa 1950s



Conoco, Inc., R&D Center, Ponca City
circa 1950s



Phillips Petroleum Research Lab, Bartlesville
circa 1950s

Renewable Fuels Research at ERI

From left: RBD Soybean Oil, Distillers' Corn Oil, Tallow, Used Cooking Oil, Fish Oil, Palm Oil Mill Effluent

Lab

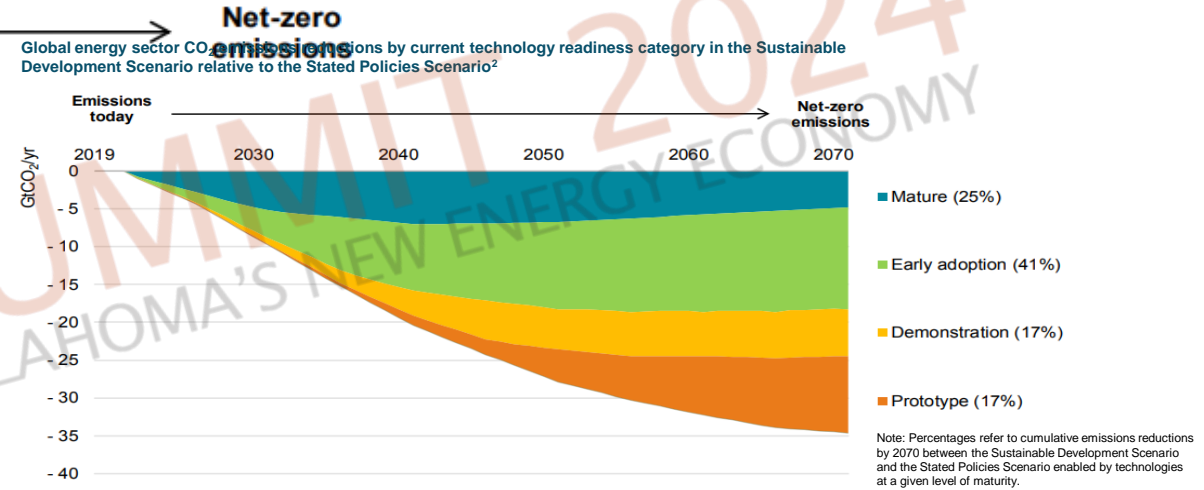
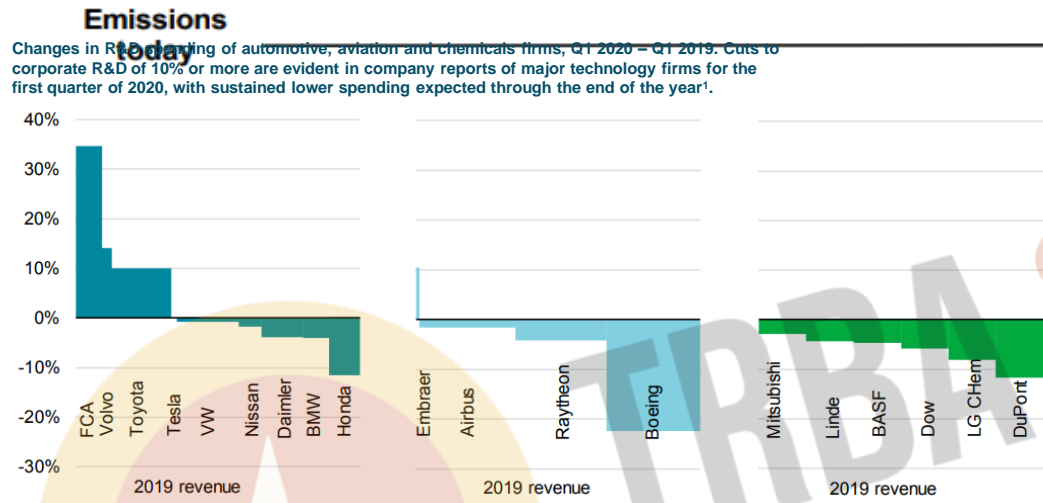
Pilot Plant

Refinery

1 Barrel of oil = 4 Cows = 15 Pigs = 800 Chickens = 672 Pounds of Shelled Corn = 1300 Pounds of Bagasse

R&D Spending and Energy Transition

Global energy sector CO₂ emissions reductions by current technology readiness category in the Sustainable Development Scenario relative to the Stated Policies Scenario, Q1 2020 – Q1 2019¹.



Technologies that are only at the large prototype or demonstration stage today contribute almost half of the emissions reductions in 2070 in the Sustainable Development Scenario.

The importance of 'hard tech' increasingly important and harder to deliver for energy transition as firms decrease R&D spend

Note: Percentages refer to cumulative emissions reductions by 2070 between the Sustainable Development Scenario and the Stated Policies Scenario enabled by technologies at a given level of maturity.

Technologies that are only at the large prototype or demonstration stage today contribute almost half of the emissions reductions in 2070 in the Sustainable Development Scenario.

1) IEA (2020), *Clean Energy Innovation*, IEA, Paris <https://www.iea.org/reports/clean-energy-innovation>, p.56, License: CC BY 4.0
 2) IEA (2020), *Clean Energy Innovation*, IEA, Paris <https://www.iea.org/reports/clean-energy-innovation>, p.64, License: CC BY 4.0

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Thank you, TRBA!