

# Preliminary Financial Modeling Results

- Project Team Working with Commercial Bank Representatives
- Commercial Credit Underwriting Model Being Modified for Industrial CCUS
- Initial Focus on Single CO<sub>2</sub> Sources from Ammonia, Hydrogen or Ethylene Oxide Transported to Single EOR Field
- Information in Public Domain Used to Inform Model



# Project Overview

## Element 1 – CO2 Capture

- CO2 is captured from a single source and sold to a single end user for EOR
- Revenue generated by the sale of the CO2 must provide sufficient revenue to meet minimum Commercial Bank underwriting requirements

## Element 2 – CO2 Transportation

- CO2 is moved via dedicated pipeline from single source to EOR user
- Revenue generated by toll to move CO2 must provide sufficient revenue to meet minimum Commercial Bank underwriting requirements

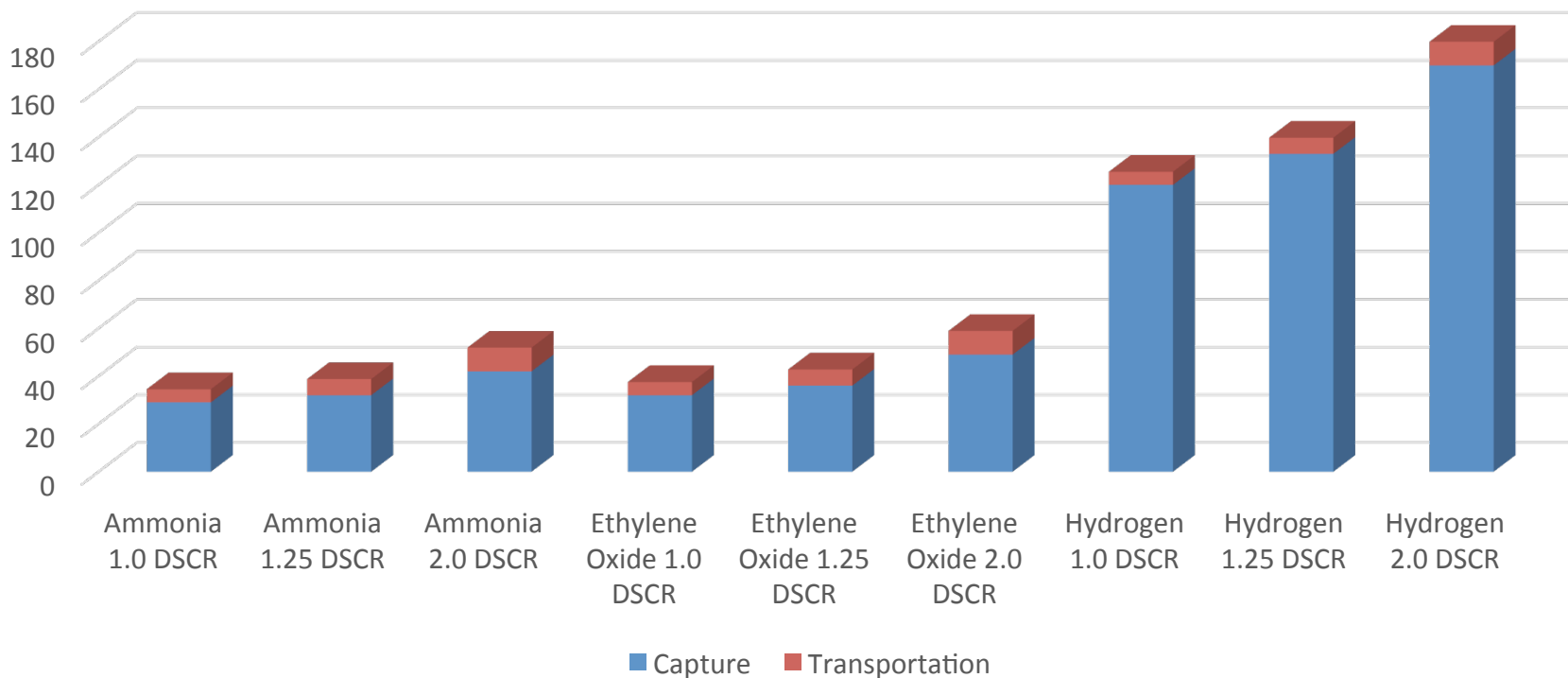
## Element 3 – CO2 EOR

- CO2 is purchased at delivered price based on combined cost of capture and cost of transportation
- Revenue generated by EOR and sale of additional oil must provide sufficient revenue to meet minimum Commercial Bank underwriting requirements



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CO2 Capture and Transportation Costs \$/Metric Ton\*



\*Cost estimates based on capture of 1,000,000 Metric Tons/year and 100 mile pipeline



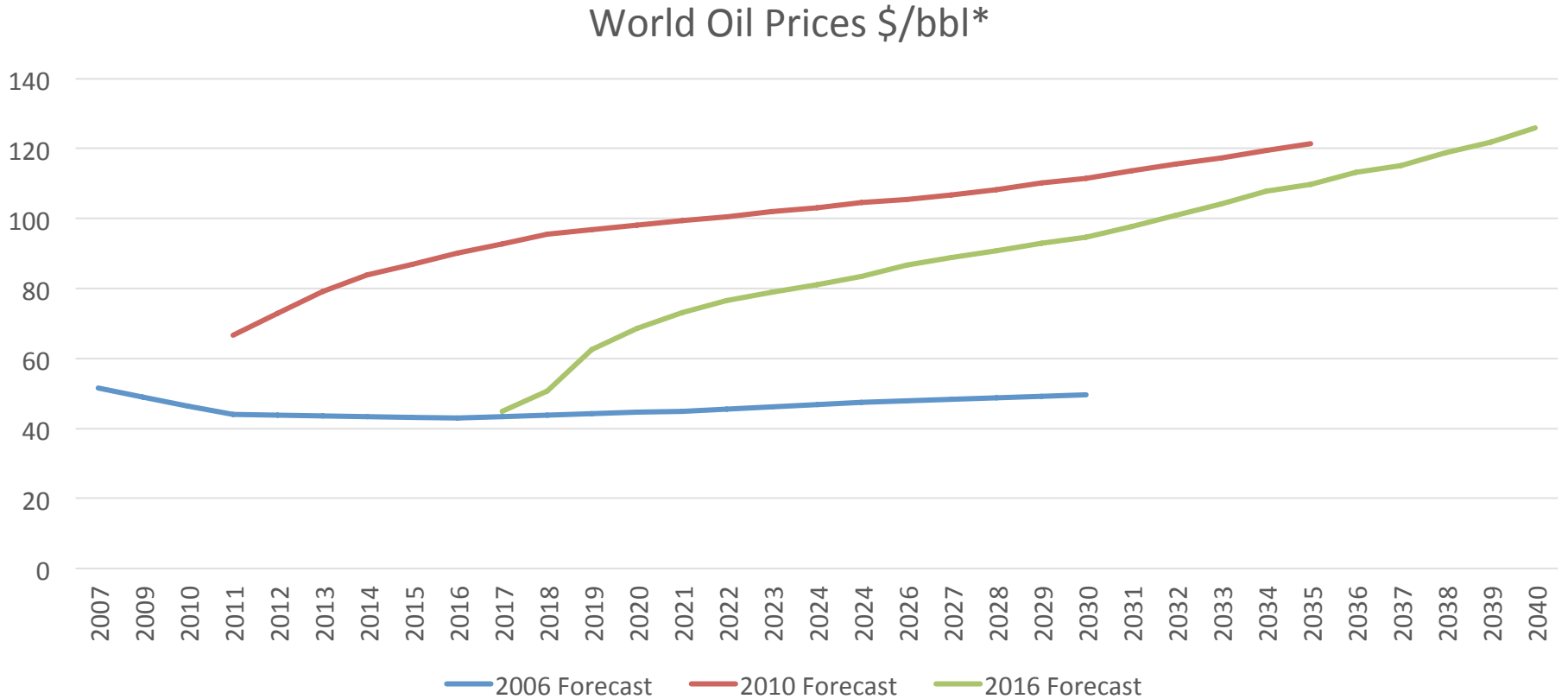
# Key Drivers in the Financial Model

- Assuming no major technological advances, the cost and operation of the CO2 capture and transportation systems will be similar for all borrowers
- Credit strength of the underlying participants will impact borrowing costs which in-turn impacts the delivered cost of CO2 for EOR
  - Credit spreads\* based on underlying credit ratings 10/27/2016
    - AAA + 76 bps
    - A +108 bps
    - BBB +174 bps
- Equity requirements may increase as credit quality declines
- Higher rated borrowers may have access to longer tenor debt

\*Source: Bloomberg – 10 year bond spreads



# Over Time, Oil Projections have Varied



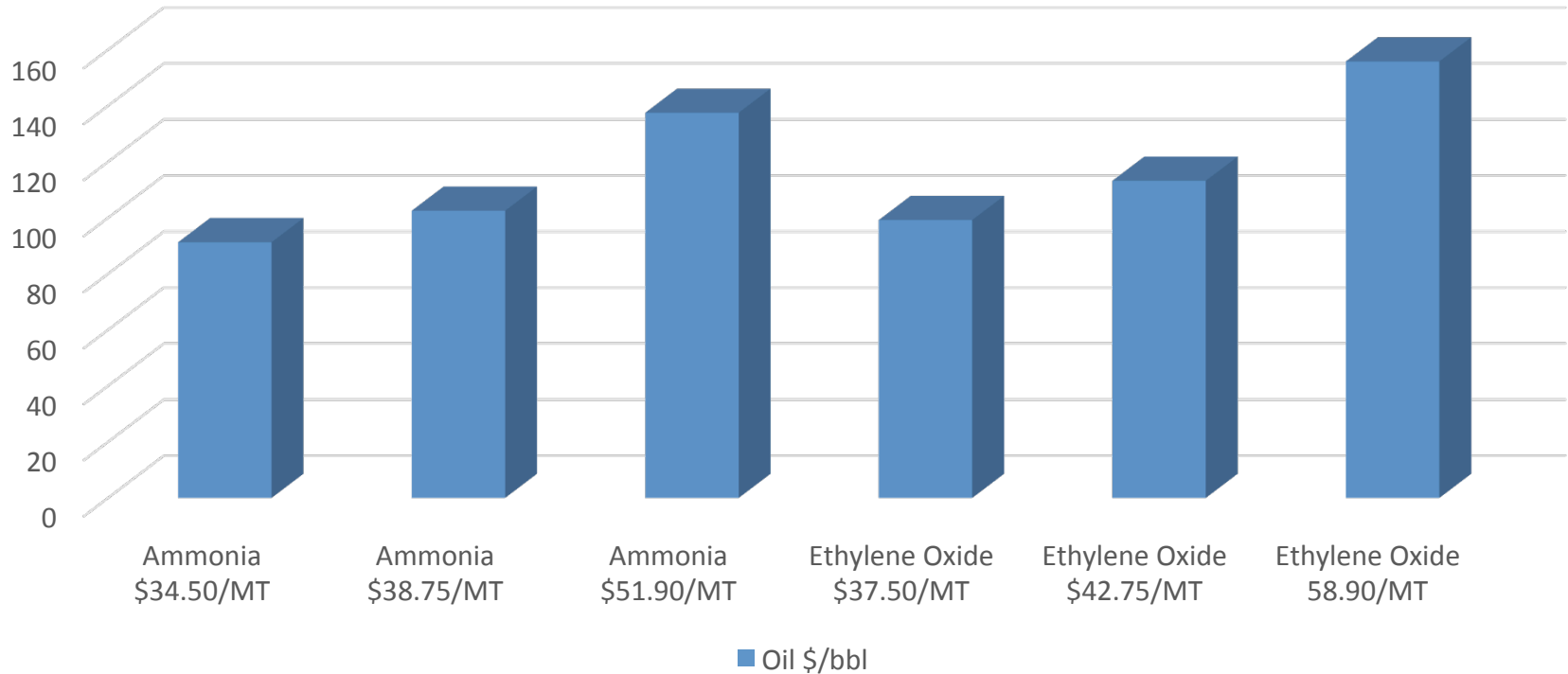
\*source EIA Annual Energy Outlook



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# Permian Basin "Rule of Thumb" Oil Values

Estimated Oil \$/bbl @ Projected Delivered Cost



\*Oil price calculated based on delivered cost of CO2.  $\$Oil/bbl * 2\% * 18.9 = CO2 \$/MT$

