



Renewable Diesel from Animal Fat

USDA Outlook Forum

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Manager Biofuels

Company Profile

- **An international, integrated energy company. 11.2 billion BOE reserves**
- **The 3rd largest integrated energy company in the United States**
- **2nd largest refiner in U.S. – 2 MMBPD, EU – 640 MBPD**
- **19 Refineries (15 wholly owned), 2.7 MBDP Worldwide**
- **Approximately 38,400 employees worldwide and assets of \$184 billion**
- **NYSE Ticker: COP**

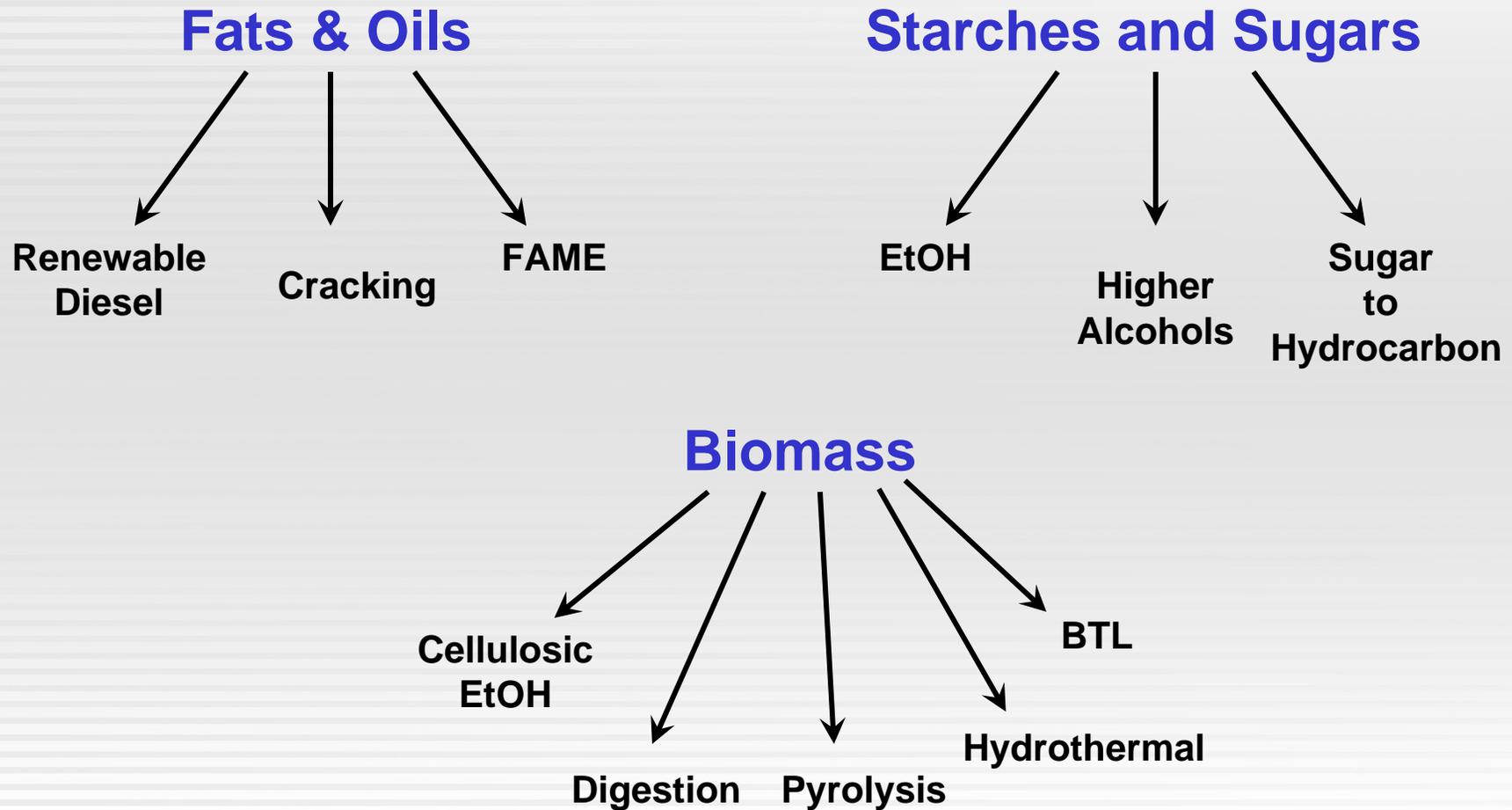
ConocoPhillips Biofuels

- We are a Blender
 - Ethanol in US and EU
 - Biodiesel in US and EU
- We are a Producer
 - Renewable Diesel in Ireland & US
- We are a Technology Developer
 - Internally
 - At Universities
 - With other commercial companies

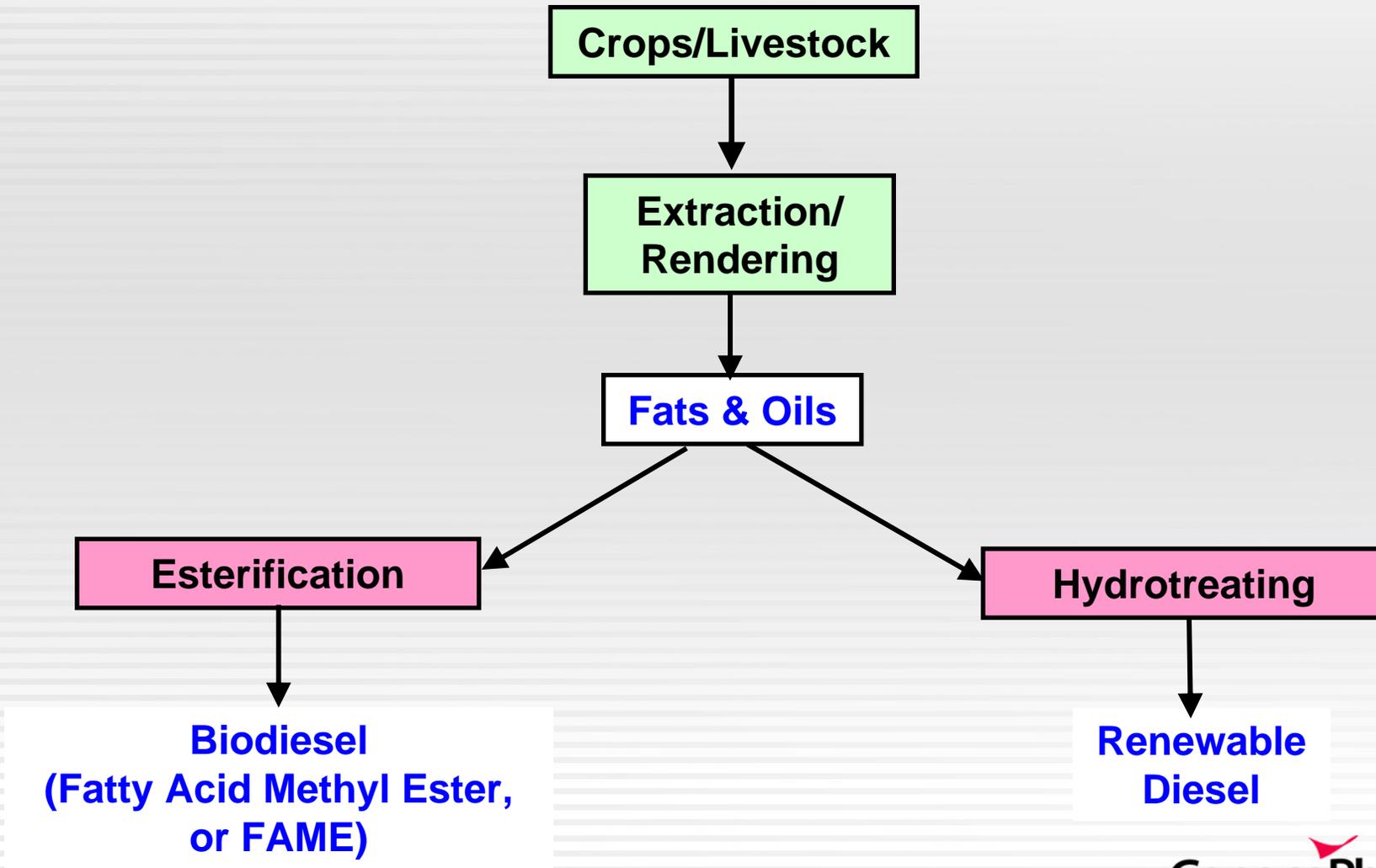
Biofuels Program Strategy

- ConocoPhillips plans to develop & implement biofuels technologies that will:
 - Establish attractive business opportunities
 - Utilize lower cost, more sustainable feedstocks
 - Maximize the use of existing infrastructure
 - Leverage COP's areas of expertise, competence and asset base
 - Minimize the carbon footprint and support COP's sustainable development strategies

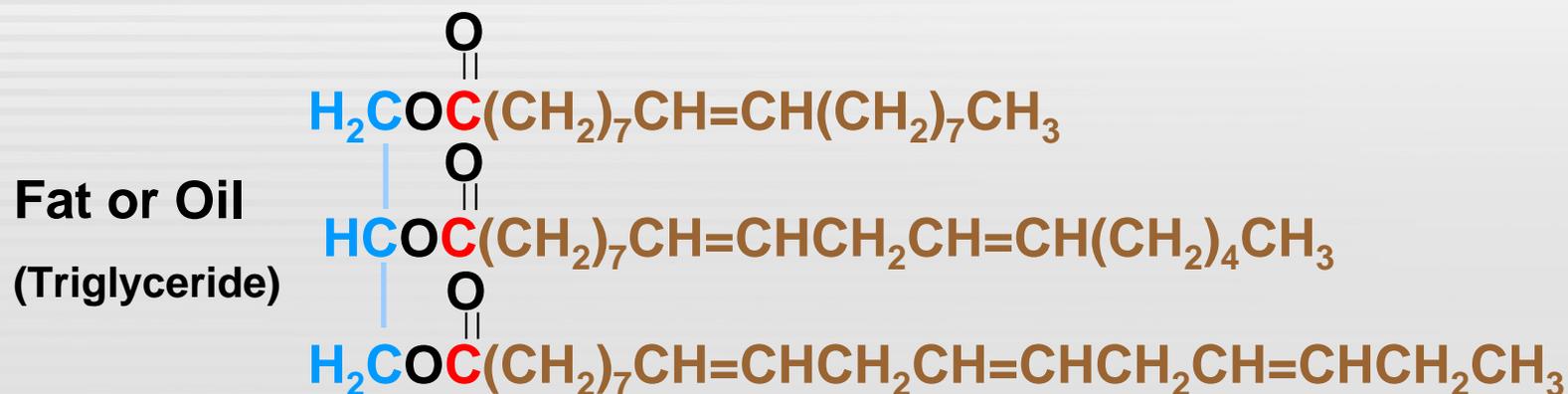
Biofuel Pathways



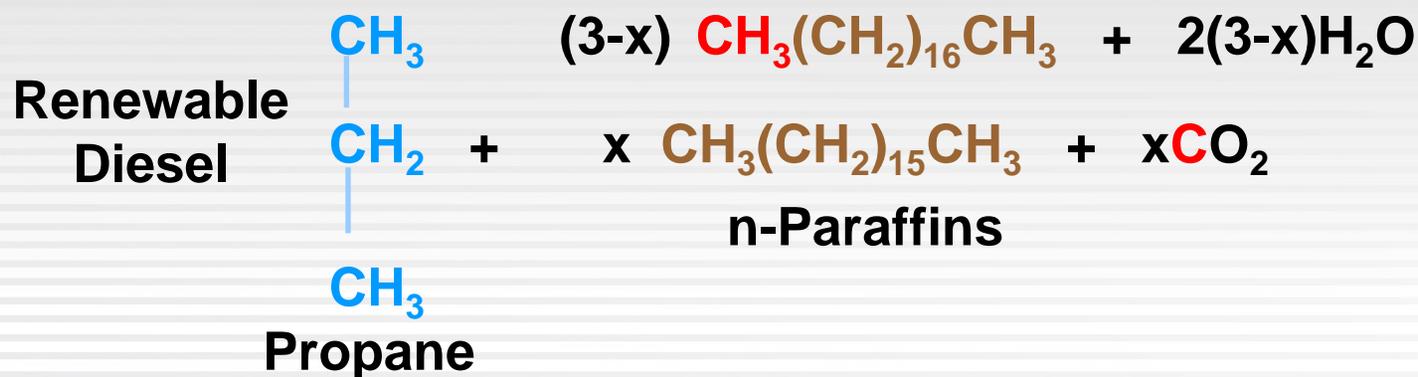
Fats & Oils Processing Options



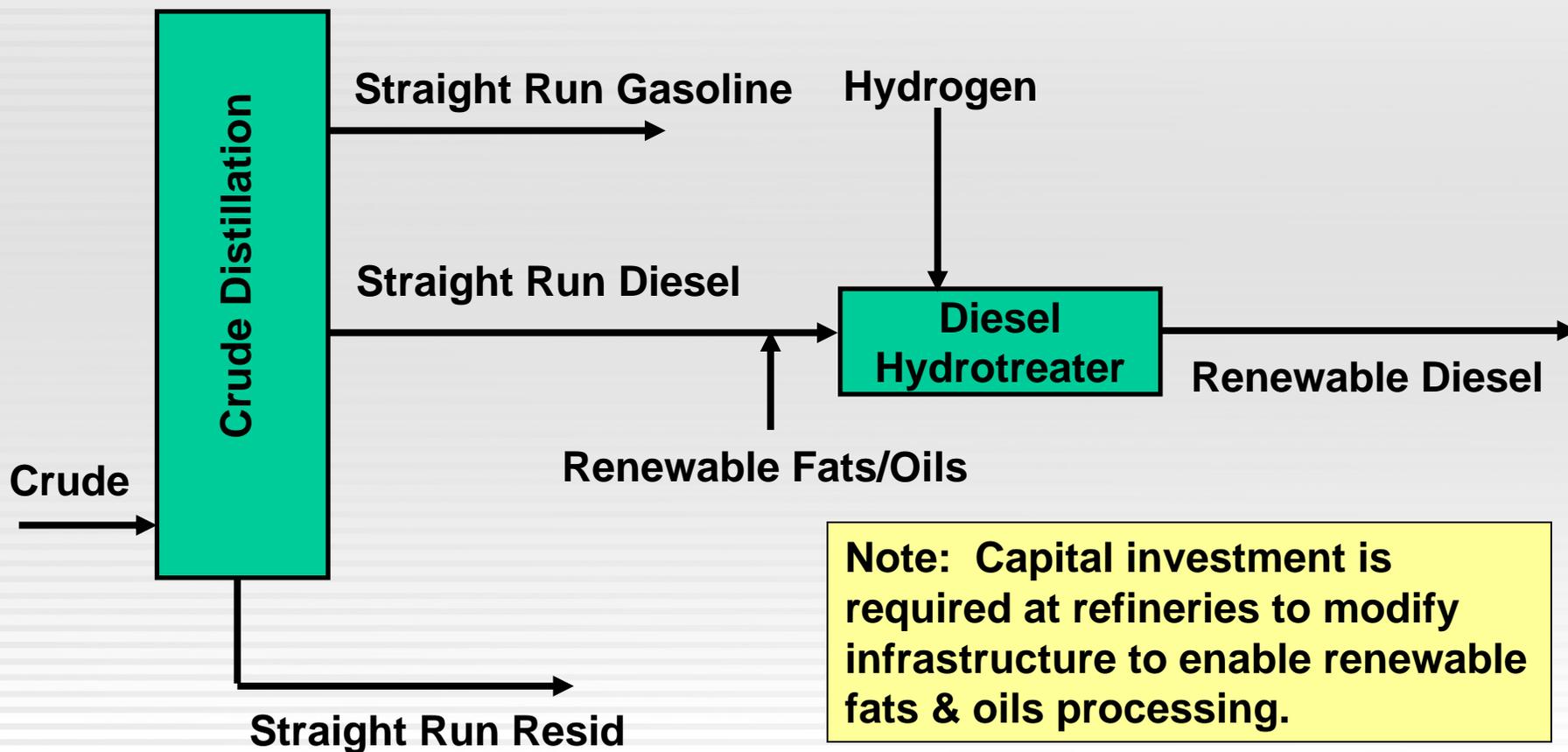
Renewable Diesel Chemistry



Hydrotreating  Heat, Hydrogen, Catalyst

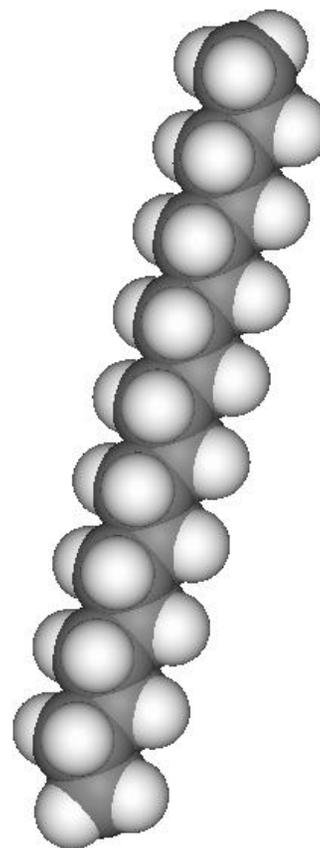


Renewable Diesel Process



Typical Renewable Diesel

- Paraffinic (C_{15} - C_{18})
- No Oxygen
- No Double Bonds
- In Heart of Diesel Fuel (C_{10} - C_{22})
- High Cetane
- Feedstock Independent
- Cold Flow Issues



Renewable Diesel Highlights

- No New Molecules-No New Fuel Specs Needed
 - Meets D 975 and EN 590 Specifications
 - Extremely High Cetane
 - Utilizes existing distribution infrastructure
 - No vehicle constraints
- Excellent GHG performance
- Criteria Pollutant Screening
 - NO_x, HC, CO, and PM all improved vs. petroleum diesel

Other Renewable Diesel Projects

- BP: 1,900 BPD, Australia - 2007 (Co-processing)
- Neste/OMV: 4,000 BPD, Austria - 2009
- Neste: 3,400 BPD, Finland - 2007, Second Plant - 2009
- Nippon Oil: Commercial Within 3 Years
- Petrobras: Four Refineries 4,000 BPD - 2007 (Co-processing)
- UOP/ENI - 2009

From publicly available sources

Other Activities

- ADM Partnership
 - Biomass to “Bio-crude” to fuel
 - Thermo-Chemical conversions
- ISU Partnership
 - Programs range from cropping systems to conversion technologies
 - Focused primarily on thermochemical conversion
 - Recently received DOE grant for BTL
- Other partnerships
 - C2B2
 - Others