

# Growing the Bioeconomy A View From an Energy Refiner

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# Where we Operate

## ConocoPhillips Key Assets, Operations and Locations

As of June 30, 2007, unless noted otherwise.



**ConocoPhillips**



Third-largest integrated energy company in the United States. Sixth-largest proved reserves holder worldwide. Fifth-largest refiner worldwide, second-largest in the United States. About 32,700 employees worldwide. 1,751 active patents in about 70 countries. \*If reorganization completed.

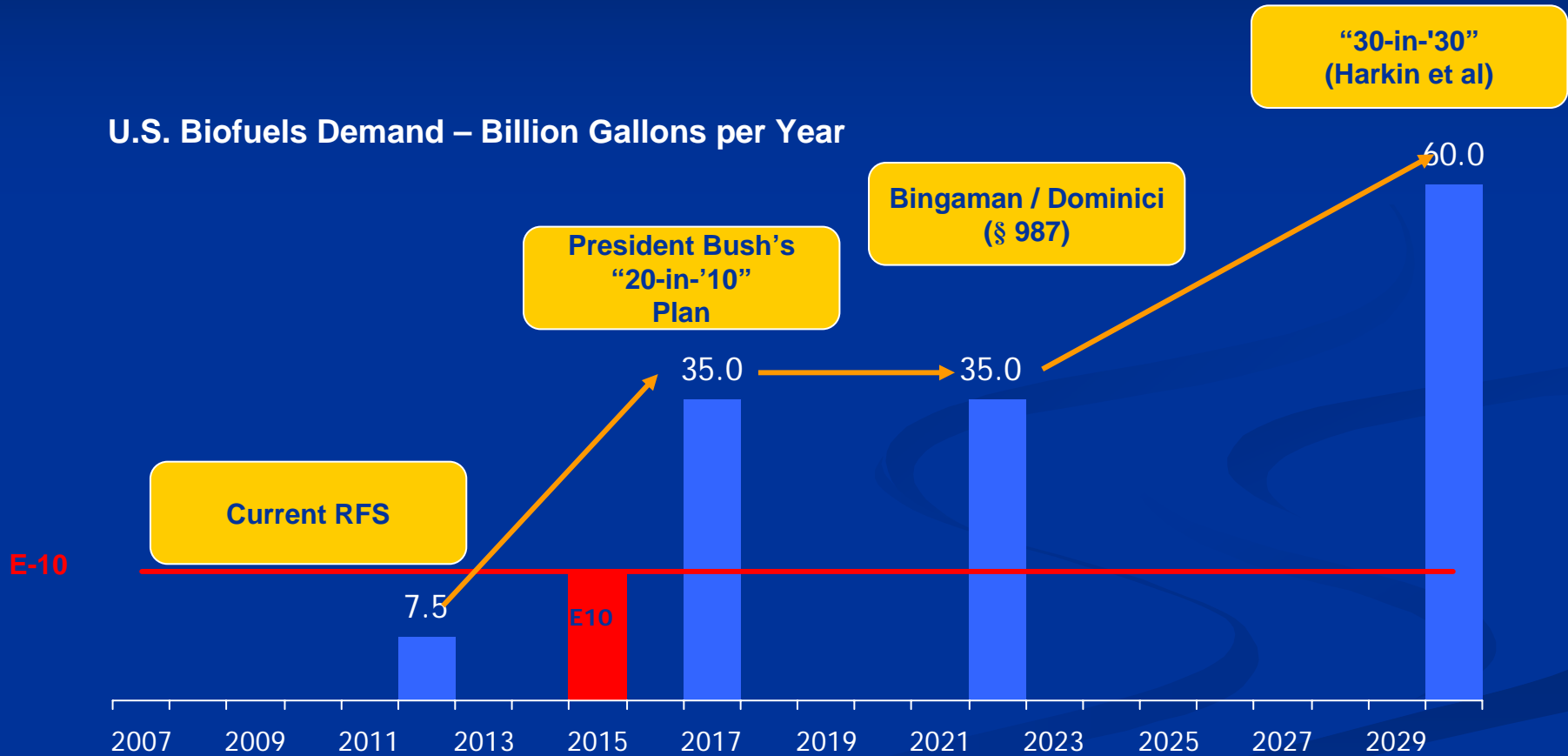
**ConocoPhillips**

# ConocoPhillips Biofuels

- We are a blender
  - Ethanol in US and EU
  - Biodiesel in US and EU
- We are a producer
  - Renewable Diesel in Ireland
  - Soon to be in US with Tyson
- We are a technology developer
  - Internally
  - At Universities
  - With other commercial companies

# U.S. Biofuels Demand Driven by Mandates

U.S. Biofuels Demand – Billion Gallons per Year



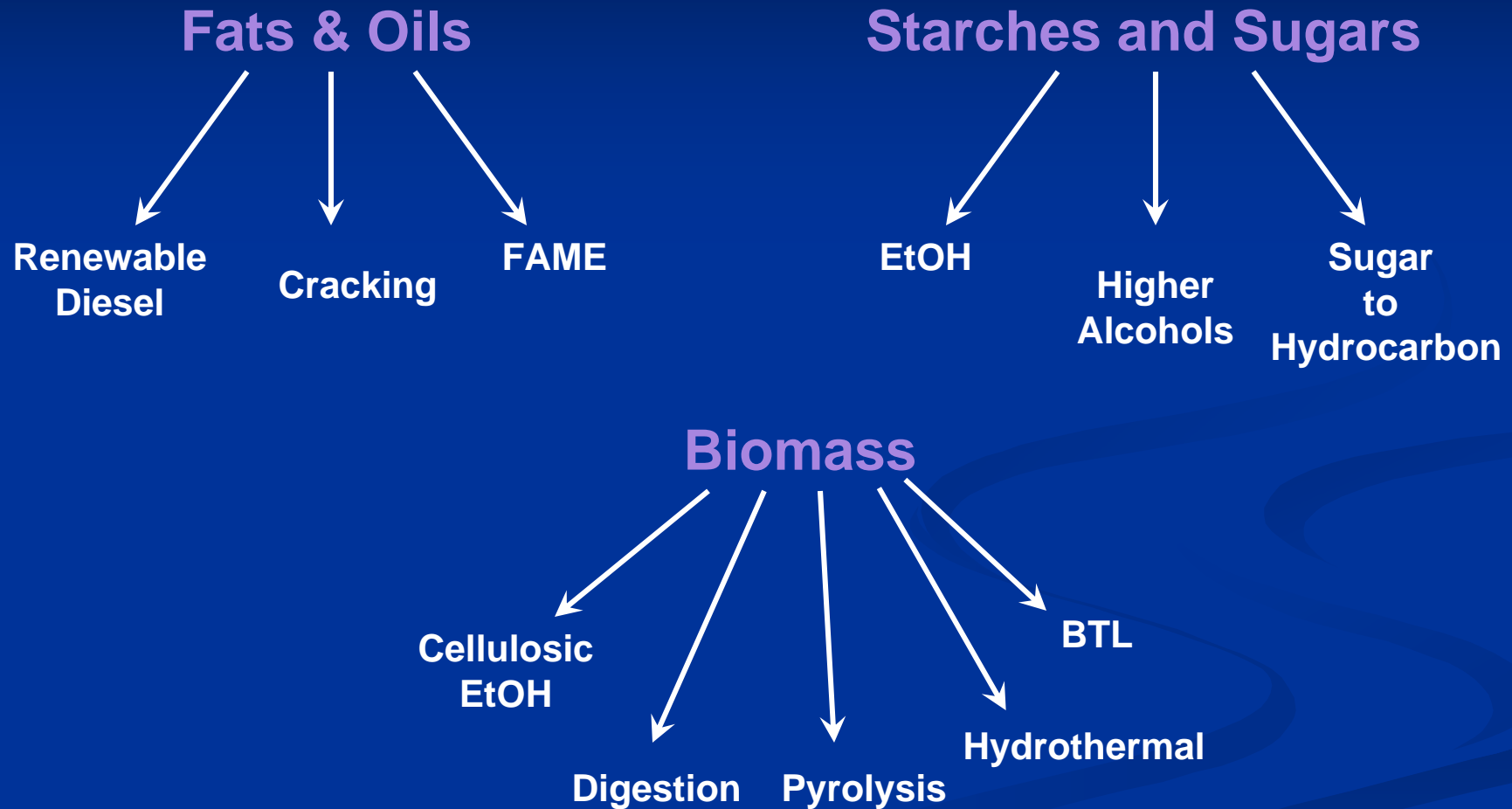
ConocoPhillips share of the mandate is ~ 10 %



# Second generation biofuels

- Require massive low cost resource
  - Ag./forest waste, wood, grass, cane, MSW
- Want omnivorous, efficient conversion technology
  - Makes the most of the resource
  - Should integrate with manufacturing infrastructure
  - Linked to distribution infrastructure
- Need conversion to market compatible fuel
  - Gasoline, Diesel
- Other Issues: Sustainability, Economics

# Biofuel Pathways



# Biofuels Program Strategy

ConocoPhillips will 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

# Partnership Strategy

- Universities that have:
  - expertise in biofuels where the majority of our external technology development needs can be met at a single university
  - programs that augment the anchor university where gaps exist
- Companies that have:
  - ready access to biomass feedstock and with feedstock expertise
  - political, legislative, and stakeholder experience and relationships in a variety of venues
  - unique biofuels technology expertise/focus
- Stakeholders that bring expertise

# Why is this hard?

- All pathways to large scale biofuels are full of uncertainty
- All will have unintended consequences
- All are full of entrenched interests
- Carbon's impact is uncertain

# What is the Answer?

- Set clear public policy goals
  - Address energy security and the environment
- Establish international standards for carbon
  - Should address both energy density and carbon intensity
- Enable competition between:
  - Feedstocks
  - Conversion technologies
  - Alternatives (electrons)
- Address sustainability
- Address infrastructure