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# Renewable Energy Alternative: Biofuels

## A Private Sector Perspective



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## Topics

- Brief overview of Suncor
- Suncor's Biofuels strategy
- External factors
  - *Government Policy*
  - *Supply*

# Suncor Operating Areas

Natural Gas  
and Renewable  
Energy

- Oil Sands
- Fort McMurray
- Edmonton
- Calgary



Energy Marketing  
and Refining

- Toronto
- Sarnia

Refining and  
Marketing, U.S.A.

- Cheyenne
- Denver

## Suncor's vision of sustainability

“Suncor’s vision is to be a unique *and sustainable* energy company, dedicated to vigorous growth by meeting the changing expectations of our current and future stakeholders.”



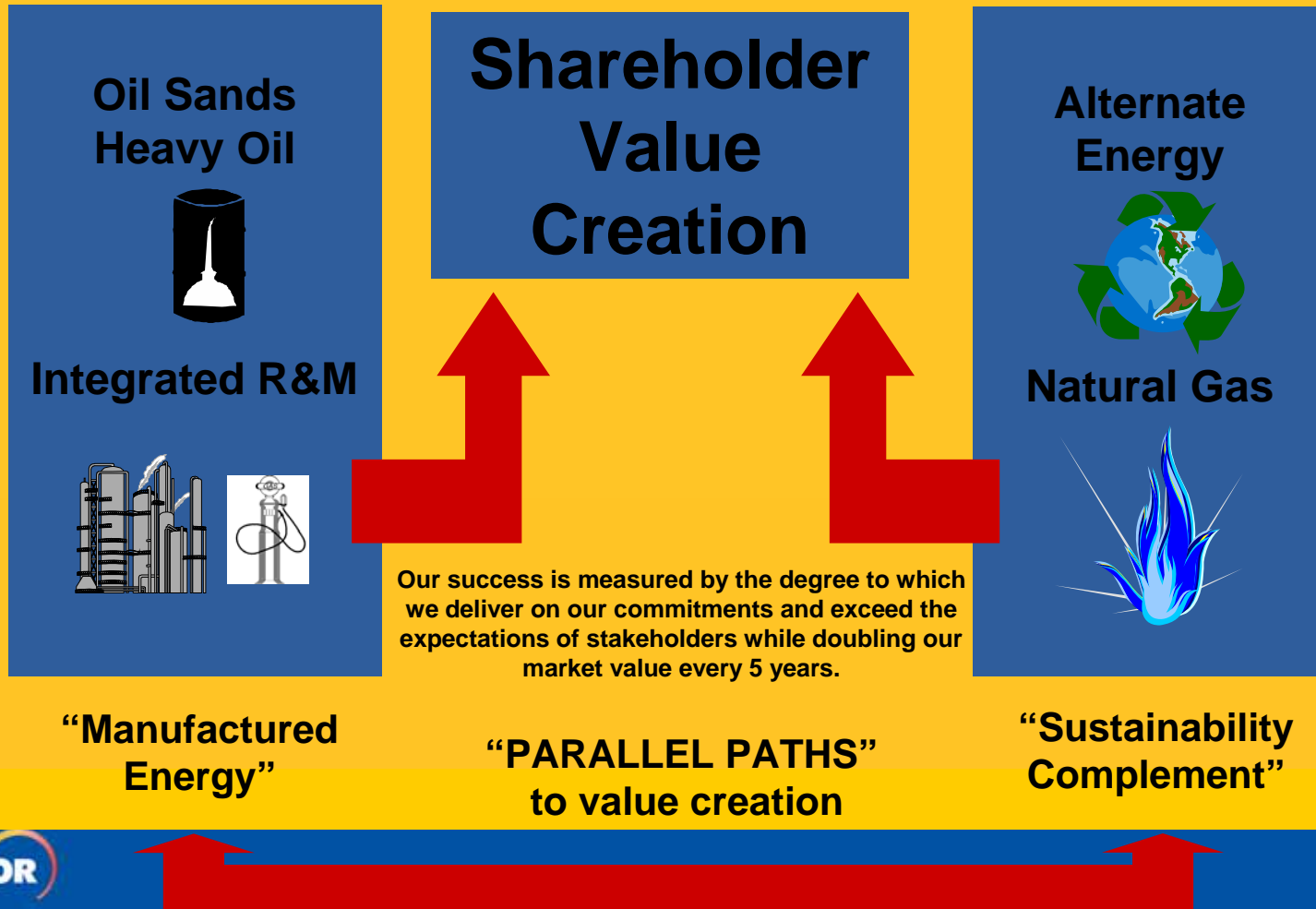
# Putting Suncor's vision to work

## Strategic framework



# Suncor's Parallel Path Approach

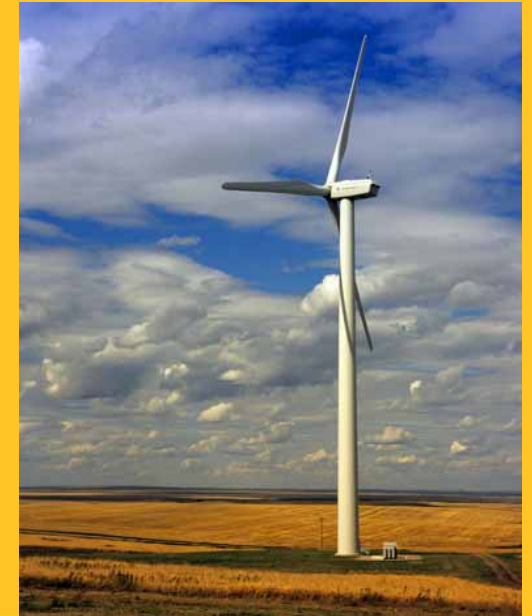
Suncor is a unique and **sustainable energy company** dedicated to vigorous growth in world wide markets by meeting the **changing expectations** of our current and future stakeholders.



# Sustainability in action

## Products and services for future

- Biofuels
  - *Ethanol-blended Sunoco-branded gasolines (all grades contain 10% ethanol)*
  - *Nearing completion of our ethanol plant near Sarnia, Ontario*
  - *Suncor will supply biodiesel to the Toronto Transit Commission (TTC) fleet of 1,491 buses*
- Wind power
  - *Two projects operational (41 MW)*
  - *Two projects in construction or up for approval (106 MW)*

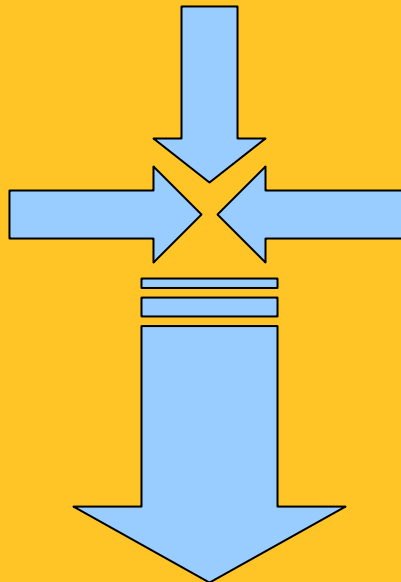


## The business plan for biofuels fits within Suncor's corporate strategy

Suncor Sustainability – meeting the needs of the present without compromising the ability of future generations to meet their own needs

Key external drivers that is creating biofuels opportunities

- High energy pricing, supply shortages, government initiatives, consumer demand to demonstrate environmentally friendly practices



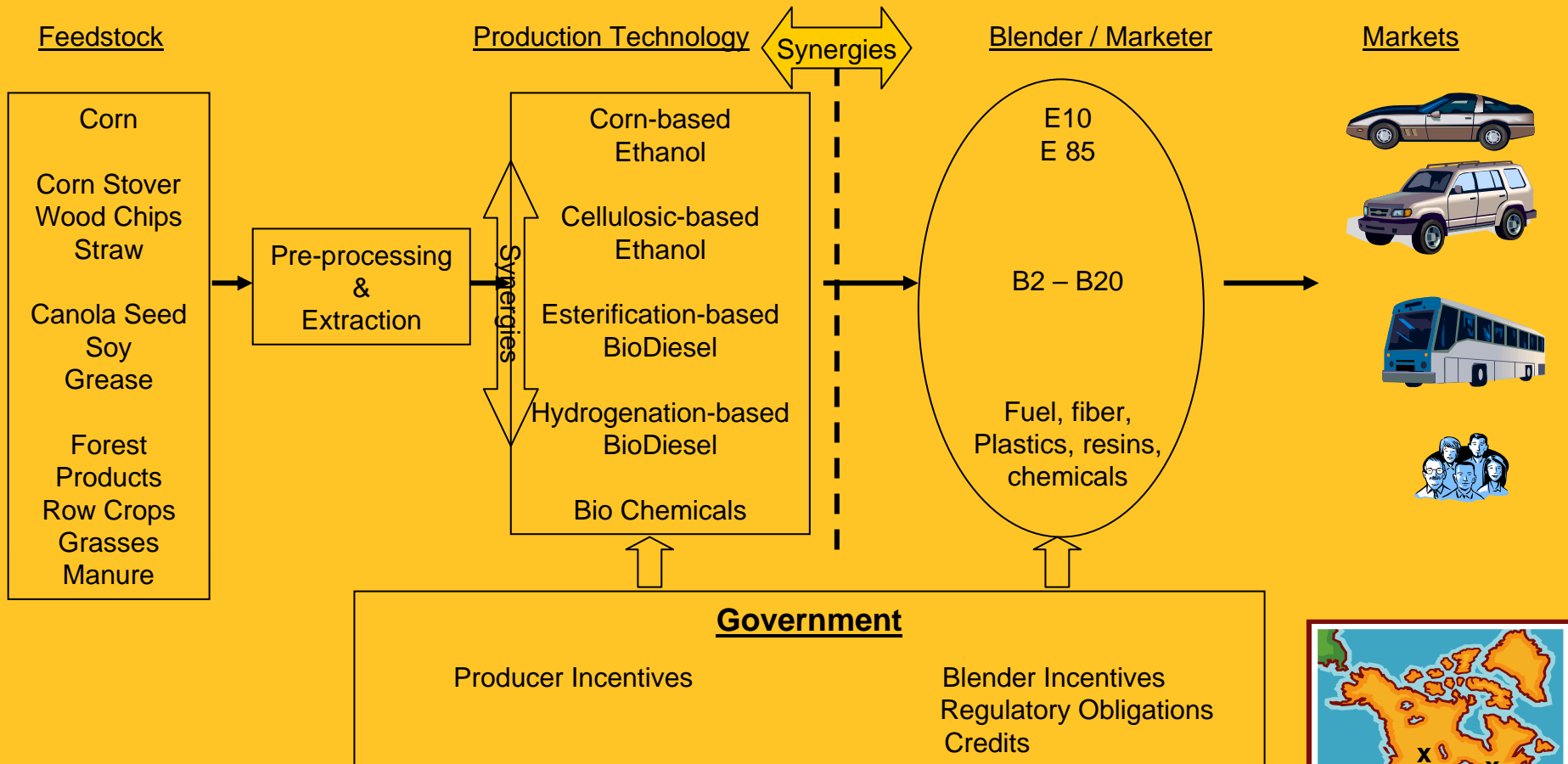
Suncor strategic drivers that fit

- Sustainability, existing core competencies, growth ambitions, target high profile market segments, being responsive to the marketplace

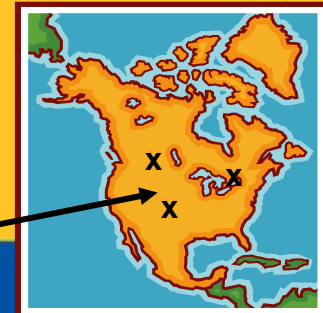
**SUNCOR ENERGY BIOFUELS OFFERING**



# Suncor BioFuels/BioRefining Strategic Elements



Feedstock availability, govt incentives, regulatory framework, market proximity



## US Government policy drives the demand growth for biofuels

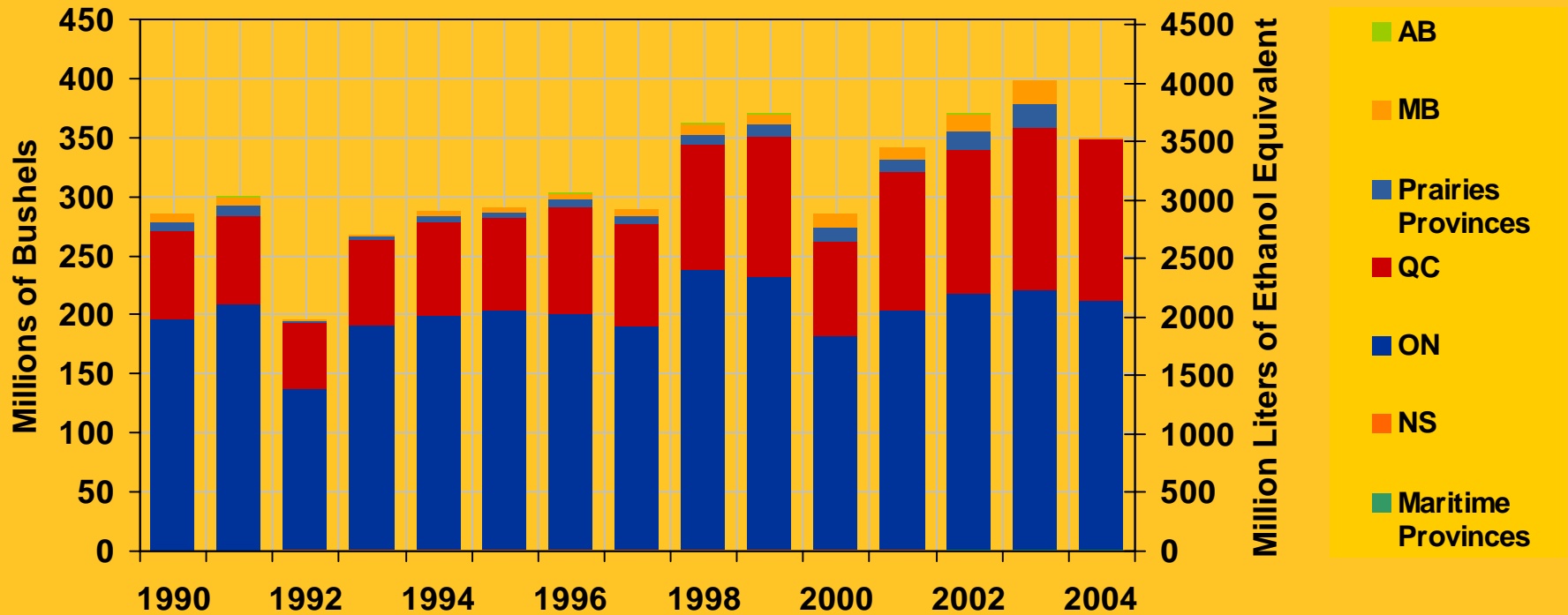
- The US is increasingly dependent on crude oil imports, now accounting for over 65% of its supply requirements
- North America is now a net importer of gasoline and distillates
- US federal as well as state governments have enacted legislation and financial support programs
  - *The Renewable Fuels Standard (RFS) provides a baseline for renewable fuel use, beginning with 4.0 billion gallons / yr in 2006 and expanding to 7.5 billion gallons by 2012*

## Canadian Government policy – Positive Direction

- The Canadian federal and provincial governments have followed suit, on the basis of climate change / air quality , agricultural and rural development objectives
  - *Federal Government launched renewable fuel strategy in May 2006, moving to a 5% biofuels content in Canada by 2010*
  - *Three provinces, including Ontario, have already enacted legislation requiring renewable fuel minimums*
    - *The Ontario 5% “Ethanol in Gasoline Regulation” is slated to come into force commencing Jan 1/07 (800 million litres).*
    - *Ontario has also indicated a similar policy desire for biodiesel*
  - *Agreement Reached in May for a National RFS (5% ethanol)*

# Ontario produces half the corn in Canada

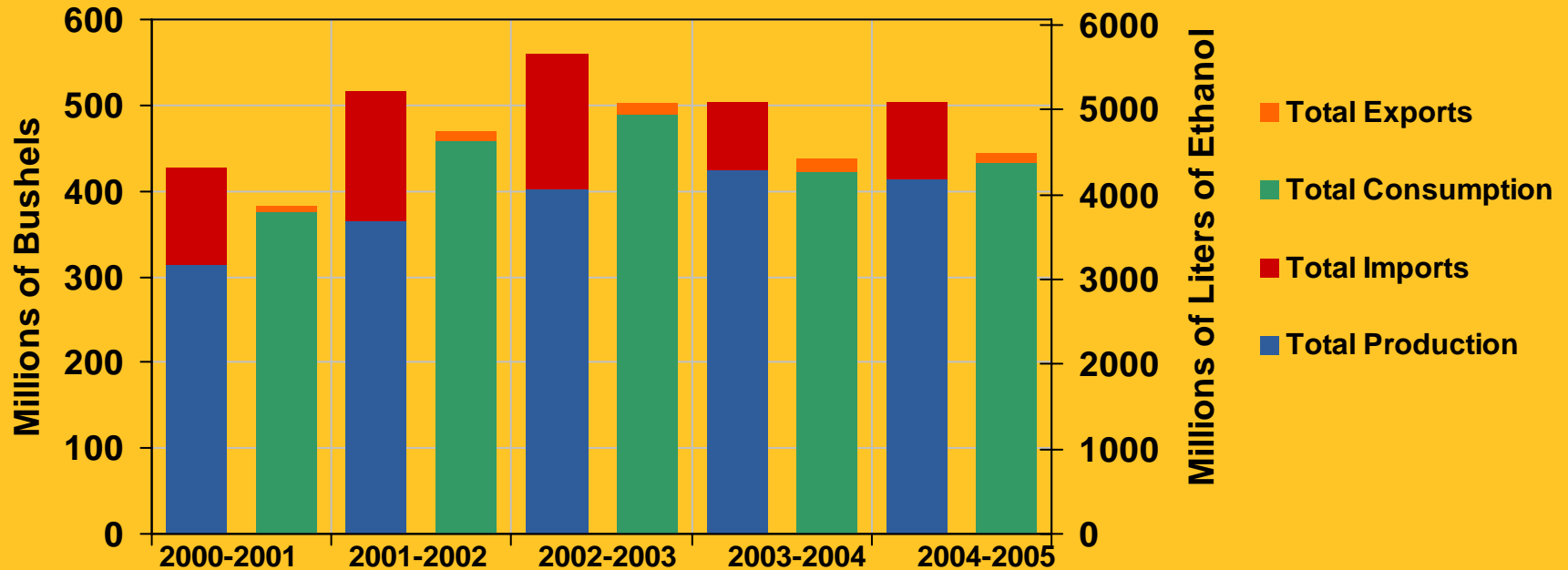
Canadian Corn Production by Province  
(1990-2004)



Source: Statistics Canada (CANSIM)

# US imports account for almost one fifth of the corn supply in Canada

Canadian Supply and Demand of Corn  
(2000-2005)



Canadian imports of corn decreased sharply in 2003-2004 as corn inventory levels in the US declined

Source: United States Department of Agriculture, FAPRI

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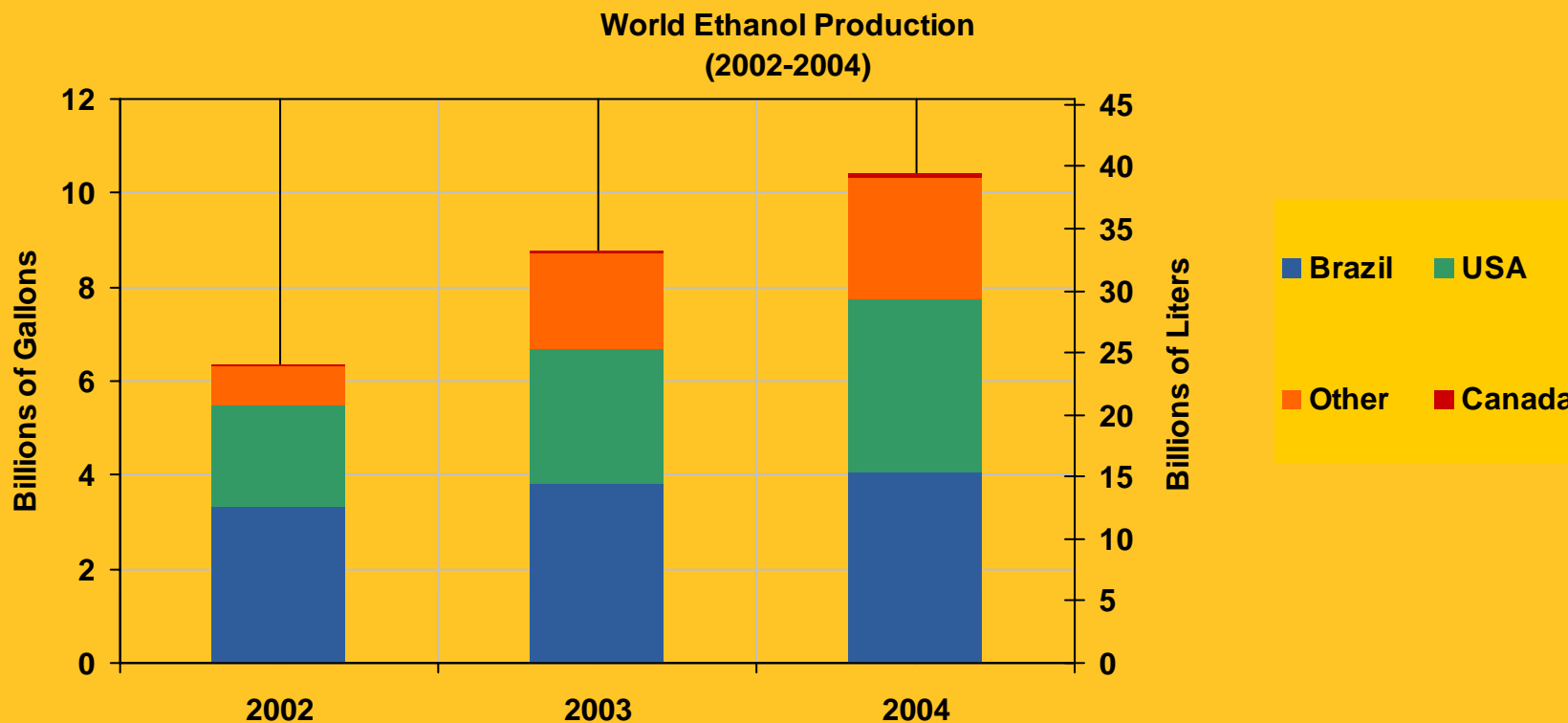
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# The world produced 10.4 billion gallons of ethanol in 2004 – about 680 kbd



- Brazil produced about 39% (ex sugarcane), while the US produced 35% (corn mainly)
- Canada just 1% (corn mainly)
- Fuel is by far the largest use

Source: CRFA & RFA

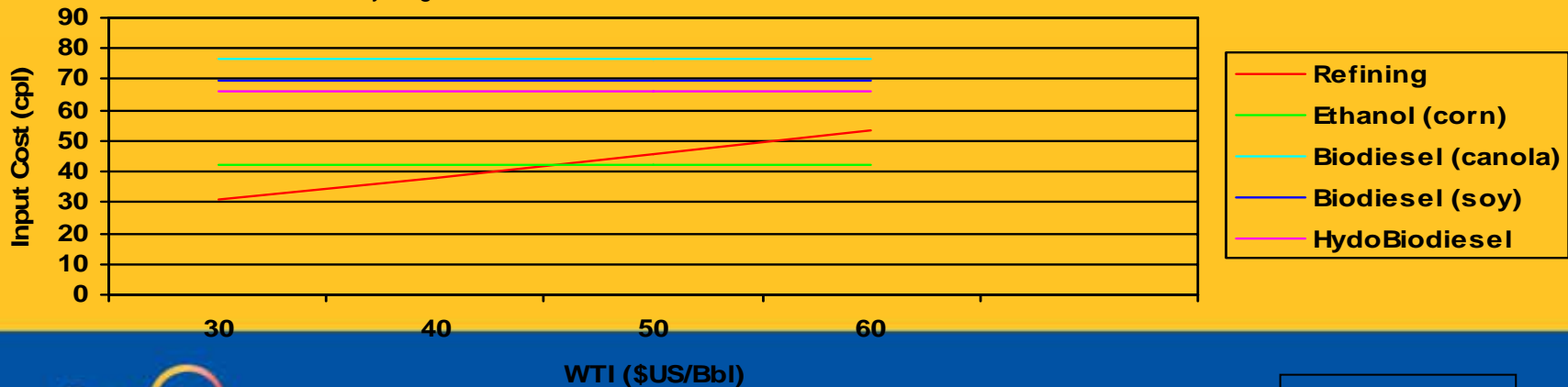
# Higher energy prices are enabling biofuels to be more economically attractive

## External Context

	Capital Cost	Net Feedstock Cost	Energy Cost	Operating Cost	Total Cost
Refining @ \$40WTI	1.0	34.4	1.7	1.1	38.2
Refining @ \$60WTI	1.0	48.8	2.3	1.1	53.2
Ethanol (corn)	3.0	24.0	9.7	7.9	44.6
Biodiesel (canola)	5.0	68.9	0.7	1.8	76.4
Biodiesel (soy)	5.0	62.0	0.7	1.8	69.5
HydoBiodiesel (grease)	10.0	41.6	6.9	7.9	66.4

cpl

WTI @ \$40; CBOT Corn @ \$2.50; Natural Gas @ 5.60 / GJ (AECO); Electricity @ 7.9 c/KWH; CBOT Soy @ \$0.2475/lb; Canola @ \$650/ton  
Yellow Grease @ \$370/ton; Hydrogen @ \$600/m3





## E85 Snapshot

- What is E85?
  - *Fuel blend of 85% ethanol and 15% conventional gasoline.*
  - *Flexible Fuel Vehicles (FFV) can use E85 (or any ethanol-conventional gasoline mixture from 0% to 85% ethanol)*
- Quality Issues
  - *Loss of Fuel Economy - the heating value of E85 is less than conventional gasoline, **resulting in 25% fuel economy loss***
  - *Difficulties associated with cold winter starts - a winter blend should contain 70% ethanol and 30% conventional gasoline to improve ease of engine starting in cold weather*
- What is the apparent driver for E85 in the US?
  - *Manufacturing/selling of FFV vehicles gives a huge incentive to the autos with the CAFÉ standards*
  - *GM and Ford's sales forecast: 20,000 FFVs on the road in the next few years; this equates to potentially 48 ML of E85 (basis: 2,400 L/y fuel consumption for the typical driver).*