CoSi Inc

Future

Nation

Empowering

Fueling

Energy Independence for **green** and **independen**t future

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Problem Statement

- Environmental; *RFS2 mandate- 60% reduction in GHG lifecycle*
- Price Instability; *expected to rise*
- Alternative fuel mandate: RFS2- *36 billion gallon/yr*
- Air Force goal- *50% alternative fuel by 2016*
- Ethanol and Biodiesel unsuitable for Aviation

  Military approved alternative fuel- Fischer Tropsch based

CoSi Solution

- Fischer-Tropsch based:
  - *CoJet; Jet Propellant (JP)-8*
  - *CoDiesel*

- Tailor made
  - *Can make any cut*

- Improved conversion
  - *60% higher than conventional thermal process*

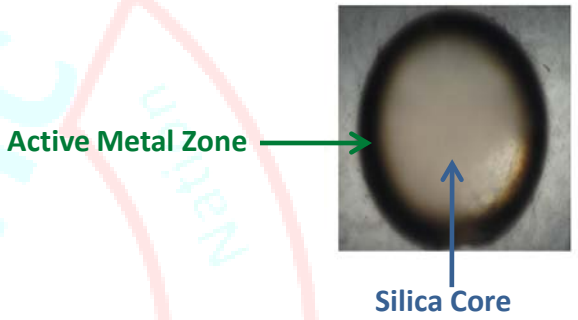
- High performance
  - *CoDiesel; Cetane # 70-80; Regular Cetane # 45-50*

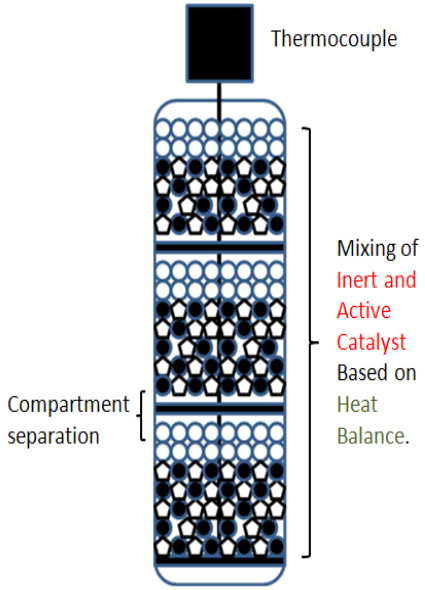
- Clean, green fuel
  - *No aromatics/ sulfur (0.5 ppm,); byproduct- water*

CoSi Innovation

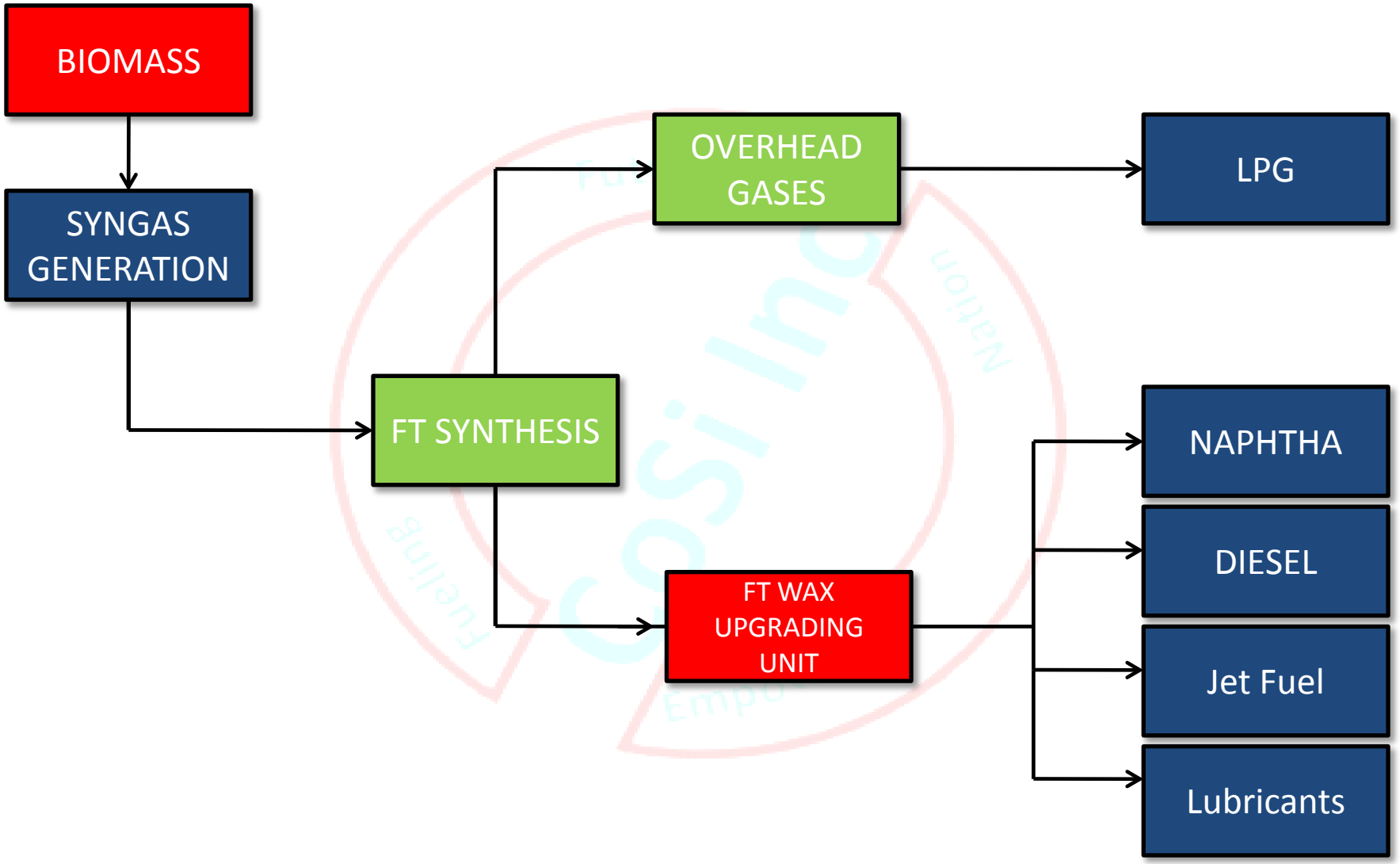
- Egg Shell catalyst technology perfected with extreme precision.
  - *Tunable*
  - *High yield*
  - *Reduced metal loading (low cost)*
  - *Easily scalable*

- Fixed Bed Reactor capable of operation with precise temperature control.
  - *No sintering in reactor.*
  - *No wax accumulation.*

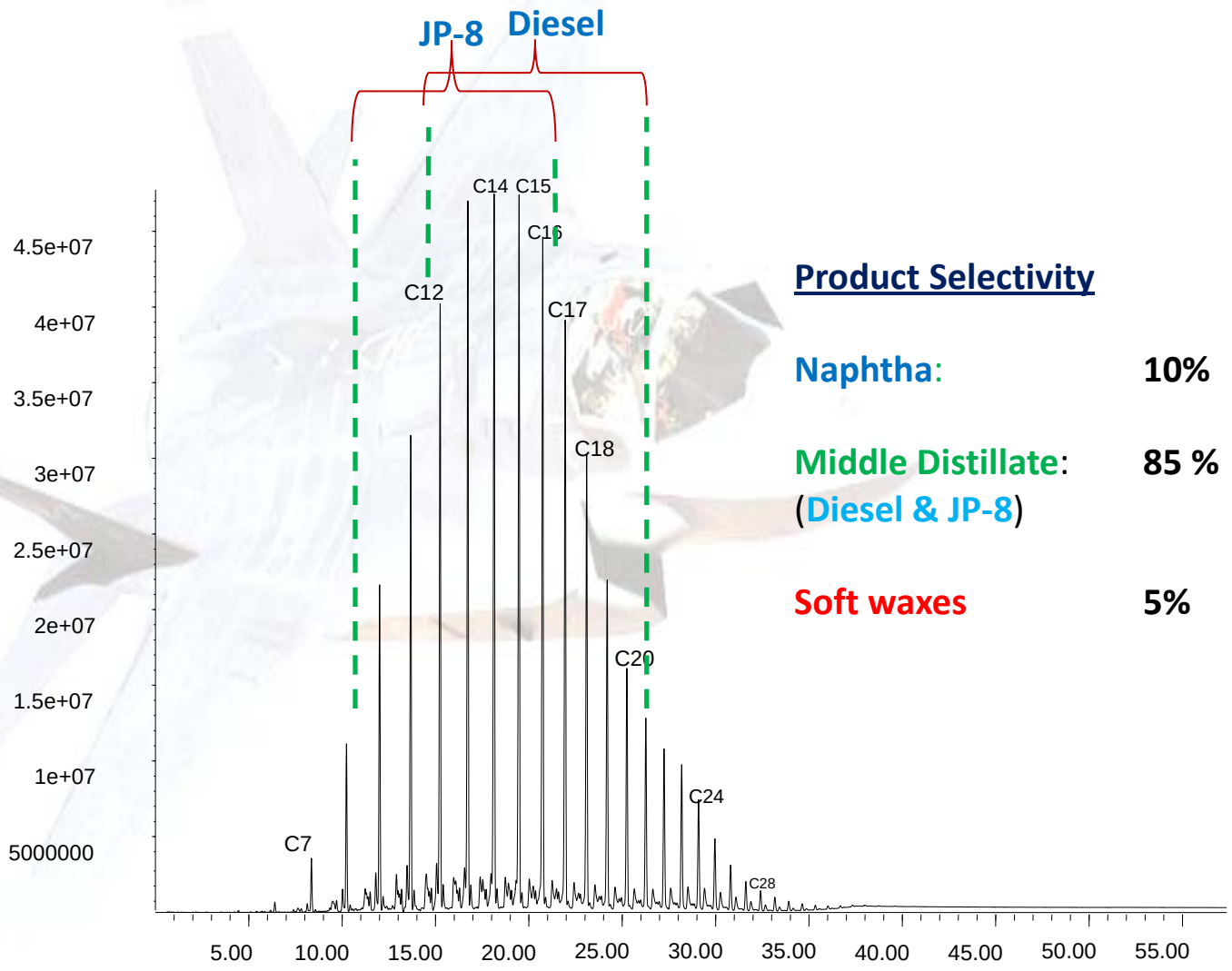




Typical INNOVATION



CoSi: Performance

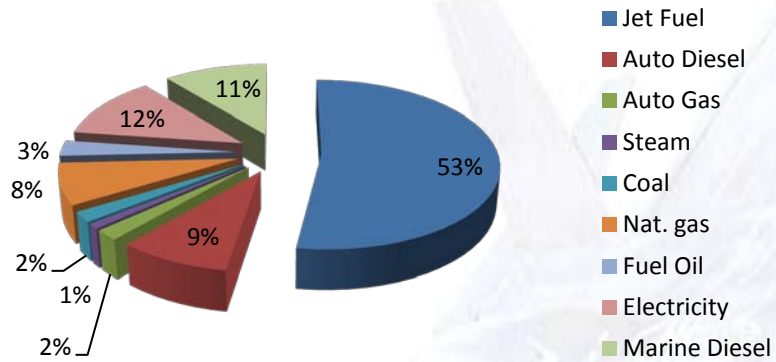


Product Selectivity

Naphtha:	10%
Middle Distillate: (Diesel & JP-8)	85 %
Soft waxes	5%

Military (Air Force) is an ideal market

- Expenditures on Jet Fuel: *$ 8.75 Billion in 2008*

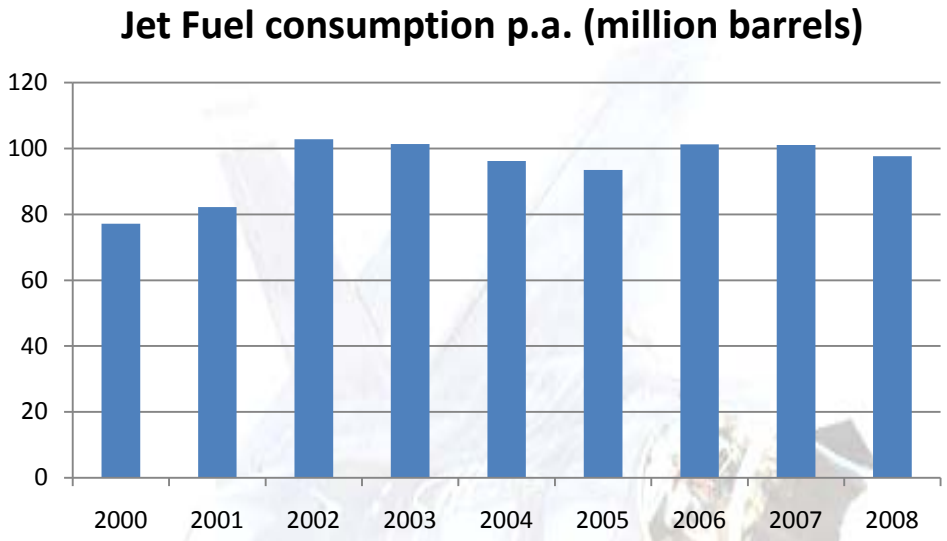


Military expenditures [1]

- Military testing flights with 50-50 fuel mix
  - Biomass derived Fischer-Tropsch

1. CRS Report, Sept 2009

Market sustainability



- Annual JP-8 consumption: **60-74 million barrels** [2]
- Expected growth: 5%-10%
- Potential market size:
  - ~30-40 million barrels annually

2. DoD Energy Security Task Force, 2008

Future Markets

Competitive landscape

Company	Type	Conversion
Rentech	Fischer Tropsch	40%
Syntroleum	Fischer Tropsch	45-50%
Choren	Fischer Tropsch	N/A.
CoSi (FL)	**Fischer Tropsch**	**70-80%**
Solena	Fischer Tropsch	N/A
Sapphire Energy	Algae	N/A

- **Barriers to entry**
  - EPA and ASTM certifications required for fuel use
  - Young company
- **CoSi Advantage**
  - Issued patents on Gasifier (Pearson Gasifier)
  - Pending application on Catalyst (University of South Florida)
  - Know-how and trade secrets on reactor and plant design

CoSi Strategy

Lab Scale

- ✓ Proof of concept
- ✓ Catalyst development
- ✓ Tunability
- ✓ Initial validation

Cost:
$200K-$300K

Pilot Plant

- 300-500 gallons/day
- Supply chain for feedstock
- Catalyzed reactor design
- Integrate unit operations
- Distillation
- Product validation
- 1-1.5 year of testing

Cost:
$1.5MM

Production

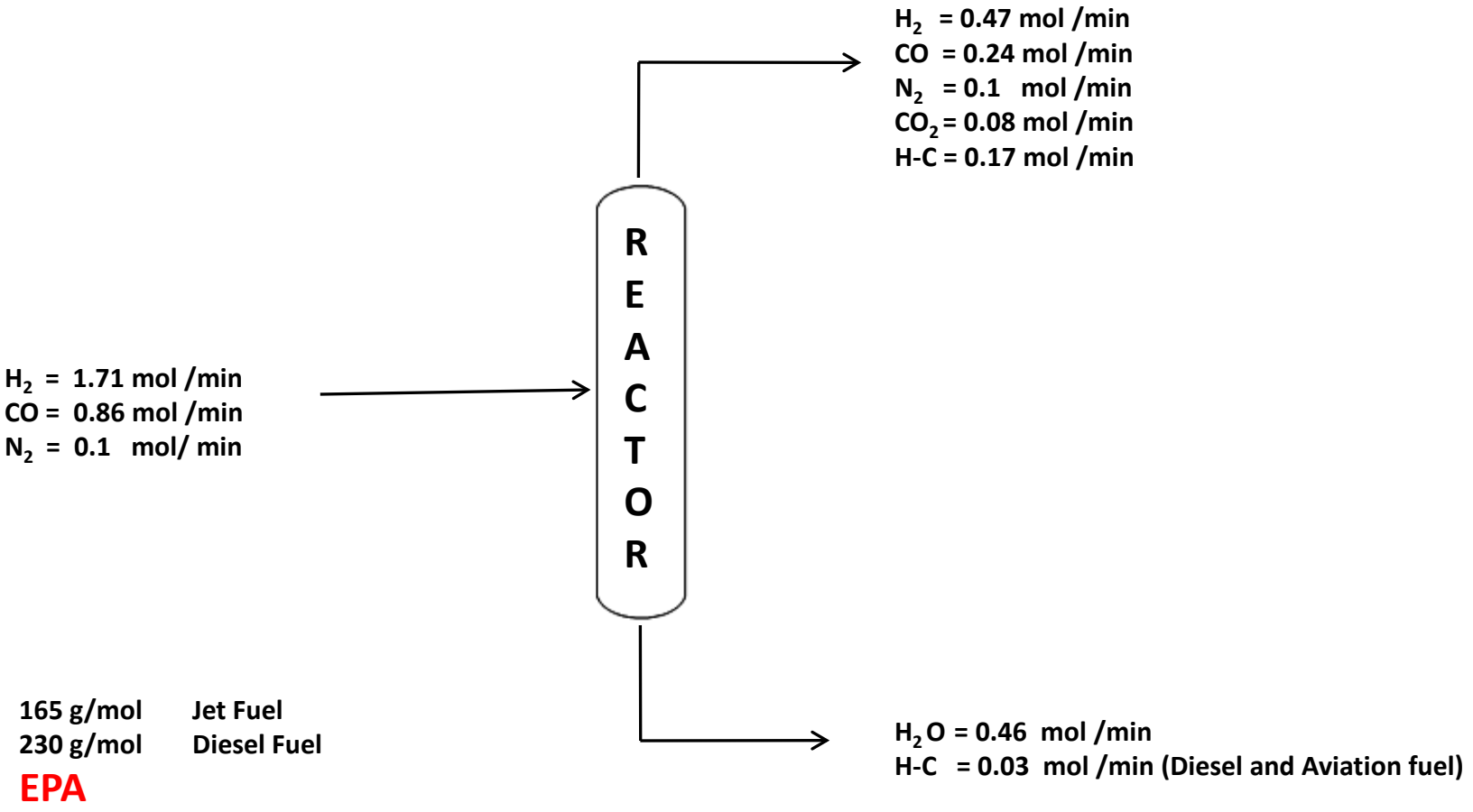
- License Catalyst and Reactor designs for alternative fuel production
- Charge upfront fee and downstream royalties

Road ahead

- Experienced management team
- Identify potential collaborators
- Hire technical staff
- Build IP and Trade secret portfolio

Thank you!

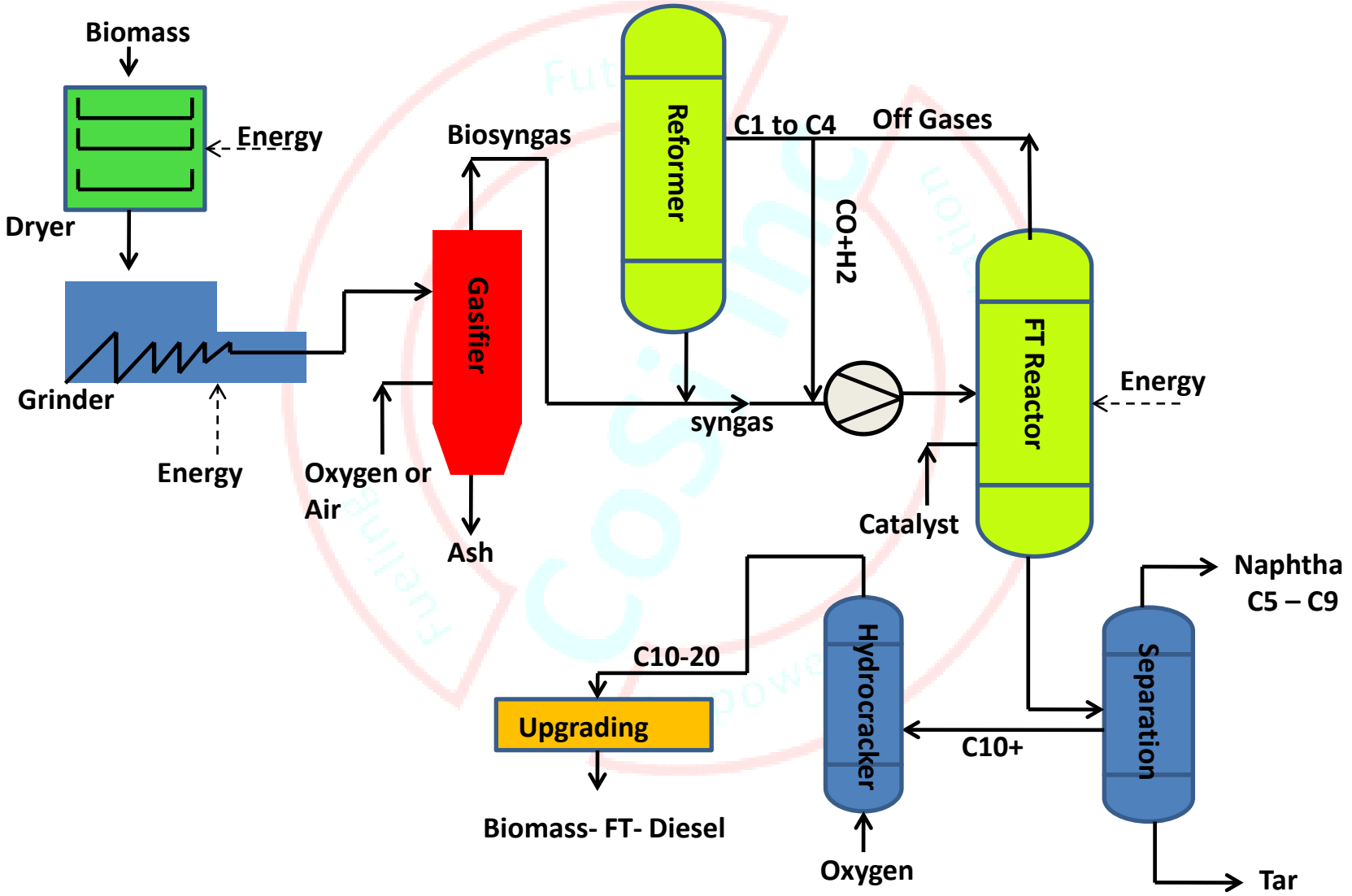
Selectivity Data



165 g/mol Jet Fuel
230 g/mol Diesel Fuel

EPA

Fischer Tropsch Process



IP

GASIFIER

- U.S. Patent No. : **7,375,142 -** Process and apparatus for the production of useful products from carbonaceous feedstock
  - Issued, May 2008
- U.S. Patent Application No: **20090077890**- Four Stage Steam Reformer

CATALYST:

- Provisional Patent Application; filed August 2009- option to file internationally