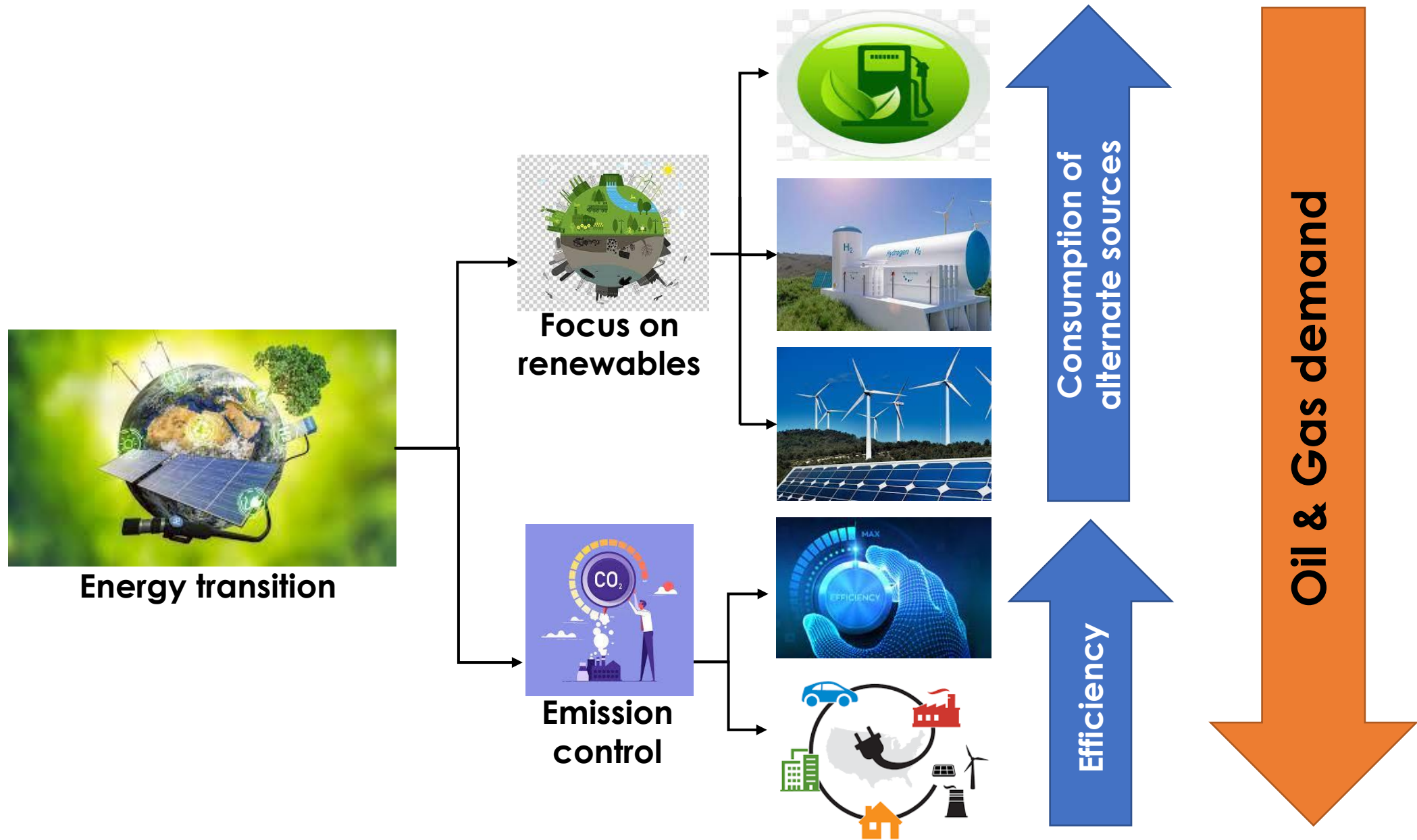


# INDUSTRIAL PERSPECTIVE ON FUTURE ENERGY TECHNOLOGIES VIA-VIS ECONOMIC FEASIBILITY



# ENERGY TRANSITION LANDSCAPE



# LARGEST CATTLE DUNG BASED CBG PLANT IN INDIA

- **Hingonia Cattle Rehabilitation Centre**, Gaushala spread over **500 acres** in Jaipur city owned by Jaipur Municipal Corporation (JMC).
- **Project Brief**
  - Feedstock** - Cattle Dung -100 tons per day
    - ❖ Compressed Bio-Gas (CBG)
    - ❖ Bio-manure Production
  - Technology: **Indigenous**
  - Project cost: **Rs. 30 Crore**

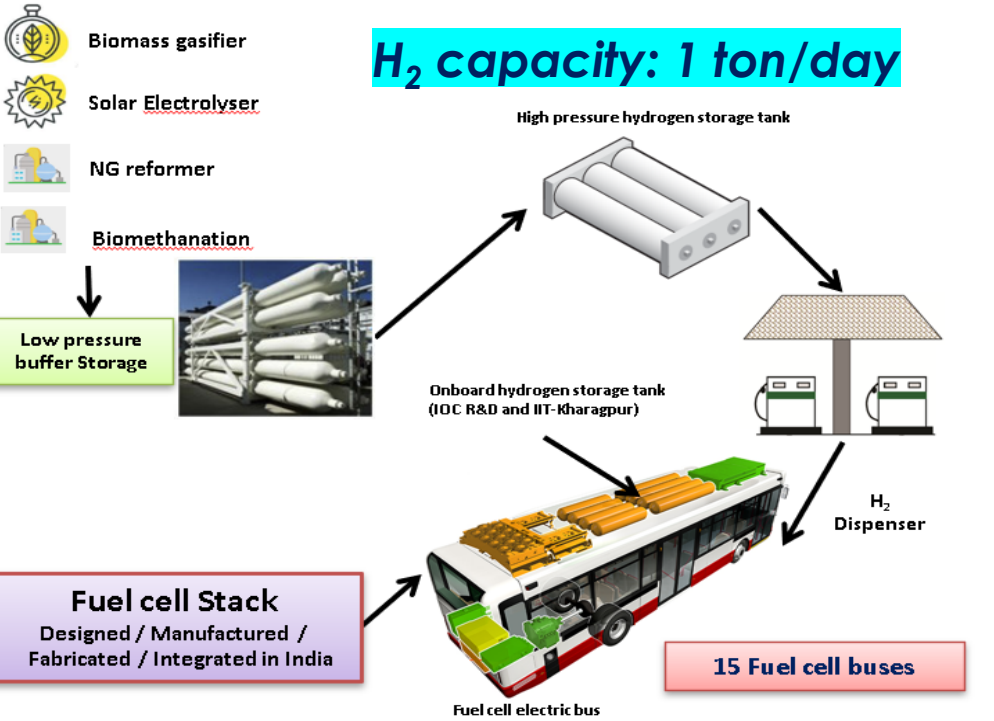


# HYDROGEN INITIATIVES

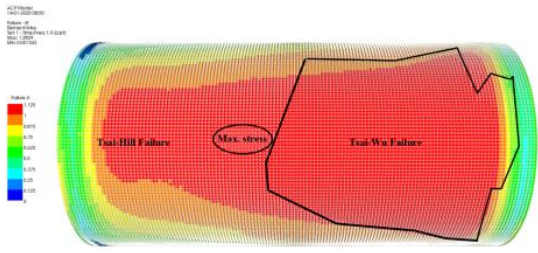
## HCNG –Hydrogen Economy



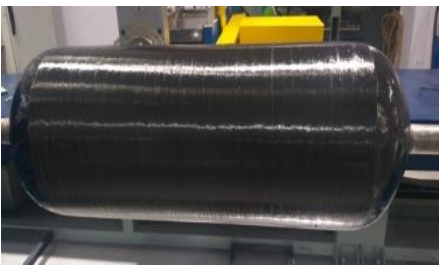
## Hydrogen Fuel cell Mobility Initiative in India



Turning Blue - Leveraging Hydrogen from Refineries  
Iconic routes to be covered



1<sup>st</sup> Indigenous Type 3 hydrogen cylinder with IIT-Kharagpur



CO tolerant Fuel cell Technology



India's 1<sup>st</sup> Hydrogen Fuel cell Fork Lift

# BATTERY DEVELOPMENT INITIATIVES

## LEAD ACID BATTERY

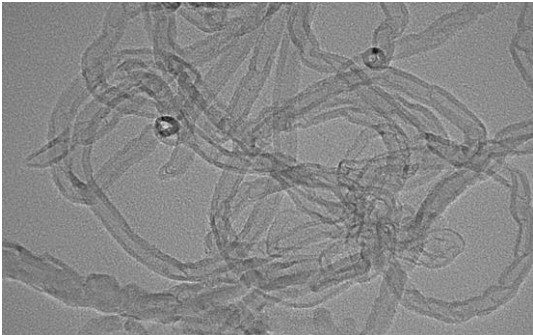
- Nano-additized based batteries
- ~20% mileage improvement per charge
- Higher charge acceptance & retention



Premium  
Lead Acid  
Battery

## Bi-Polar Lead Acid Battery

- Improvement over Conventional Lead acid battery
- Fast Charging - (4 hrs Vs 12 hrs)
- Cycle Life - 2 times



Nano additized battery - Best in class structural integrity



Carbon Nano Tube Pilot Plant



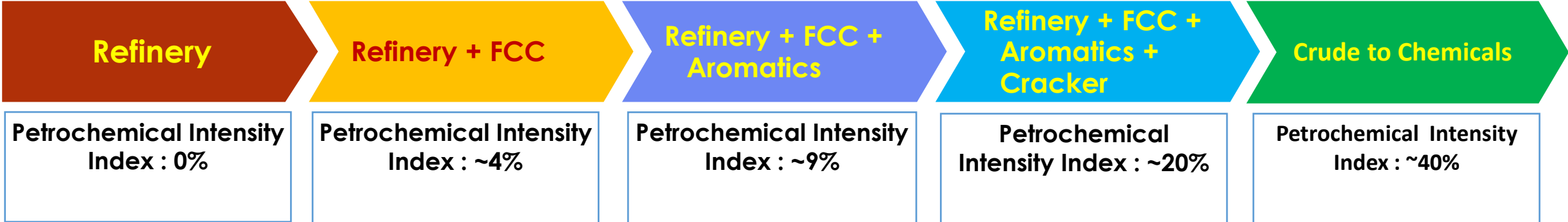
# REFINERY & PETROCHEMICALS INTEGRATION

## Rethinking refinery operations

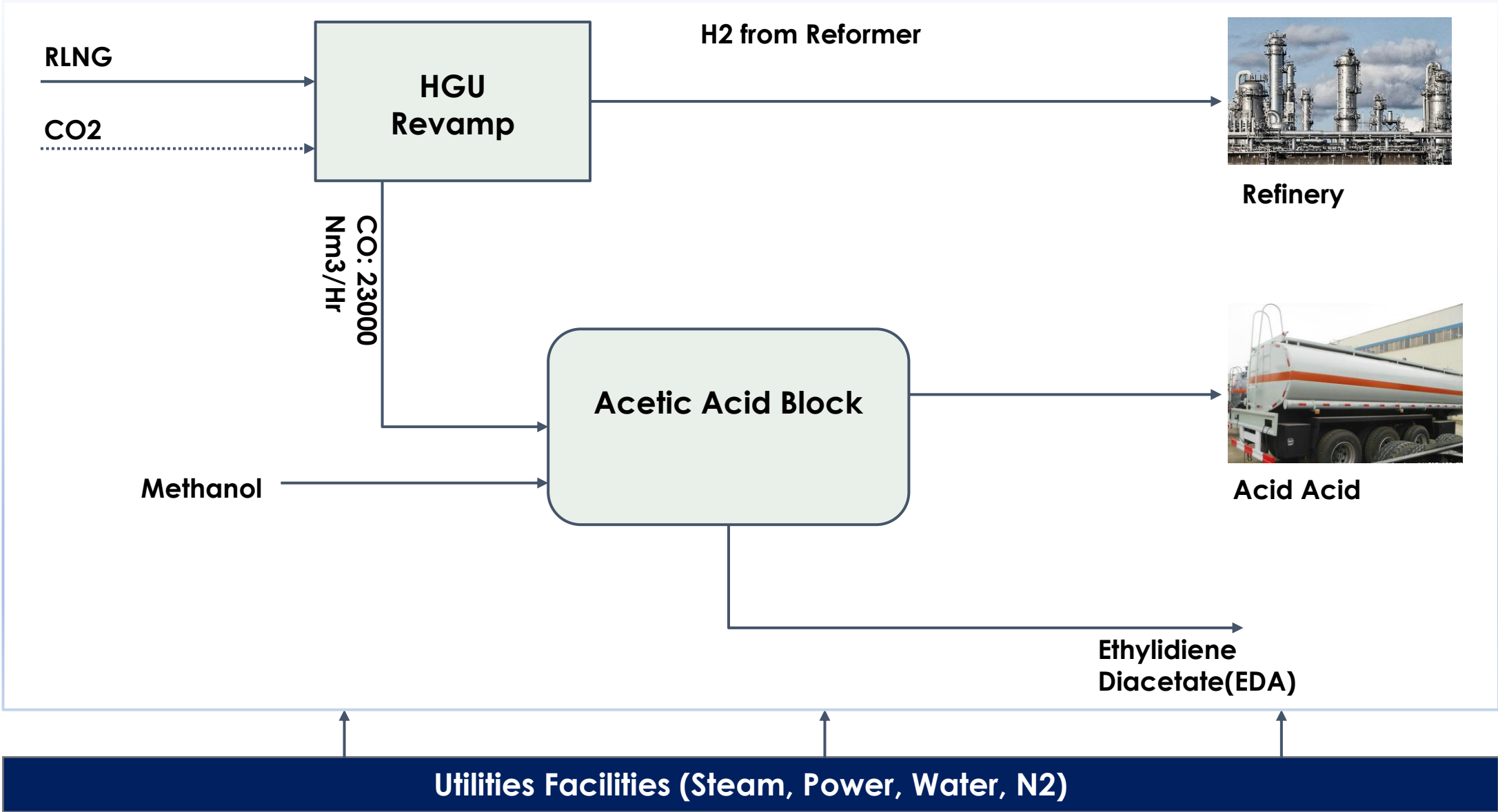
- **New process technologies-** High Severity FCC & Multi Feed Cracker (FCC to Steam Cracking)
- **New refinery configurations -** Increased hydrocracking & Maximizing aromatics reforming
- **Crude to Chemicals-** converting crude to chemicals



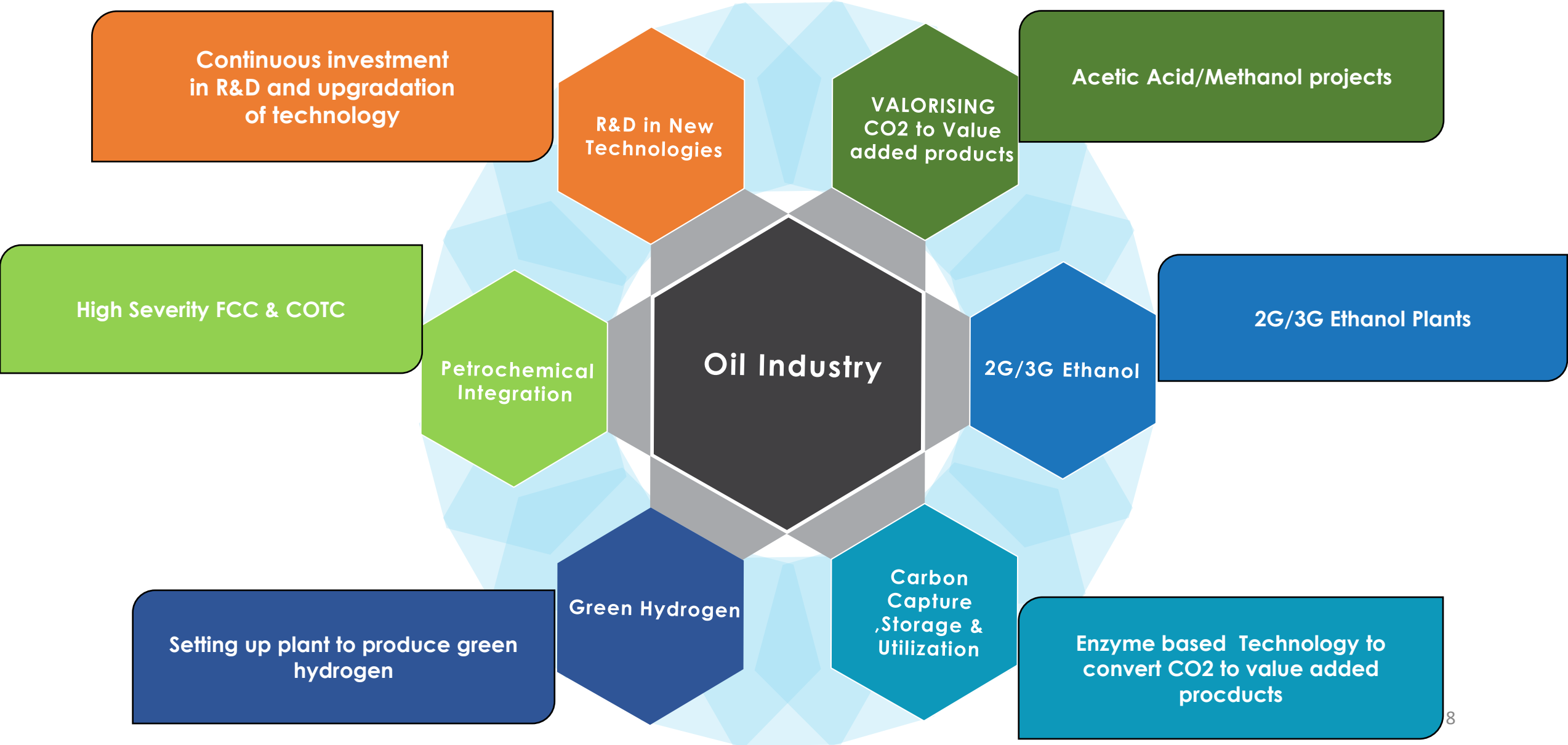
High Severity - FCC



# VALORISING CO2 TO VALUE ADDED PRODUCTS



# READINESS TO ENERGY TRANSITION





**Thank you!**