



G.I. Dynamics

Making sustainable value chains happen

Established in 2010 part of VCM Holding BV

HQ Office in Wateringen, The Netherlands

between The Hague and Rotterdam. The GID team is experienced in developing chemical projects from concept to successful plant operation

This specialist team makes it possible to integrate all these project development processes.

Scope of services: Project development & execution

- Technology provider/process technology licenses
- Concept & feasibility study
- Managing product value chain: Feed stock & Offtake
- Business support: financial modelling, risk management, financing, contract & claim management
- Project Implementation BEDP, FEED and PMC incl. training and start up
- Operation improvements and integrity

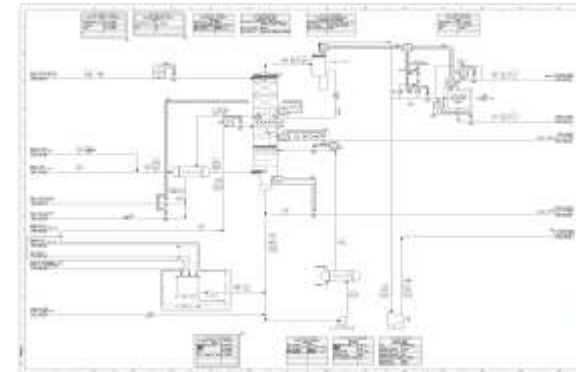


Disciplines:

- Strategic planning
- Project Finance
- Controls, Estimating & Planning
- Process and Process Controls
- Mechanical & Layout
- Electrical and Instrumentation
- Contracting and Sourcing
- QA & Document Management System
- Operational Management
- Project Management and Training & Start up.

Systems:

- Process Simulations
- Financial management and business modelling
- Planning like Primavera
- Doc management; Assai
- 2-D and 3-D design.



Chemical Division

Bio-Refineries

Ethanol-to-Ethylene
Bio-Ethanol & Bio-Diesel
EO & MEG



Caprolactam

U-Polish



Maleic Anhydride

MA Technology



Separation Process

Membrane Separation



Oil & Gas Division

Gas Processing

Nitrogen Rejection
CO2 Extraction
Catalytic Oxidation
Helium Recovery
Cryogenic Expander



Liquefaction

Small & Midscale Gas
Liquefaction



Waste Gas Handling

Enclosed Flare / Incineration



Water & Soil Treatment

Waste Water Treatment

Humid oxidation with
Peroxide OHP[®]
Wet Air Oxidation
Membrane technology

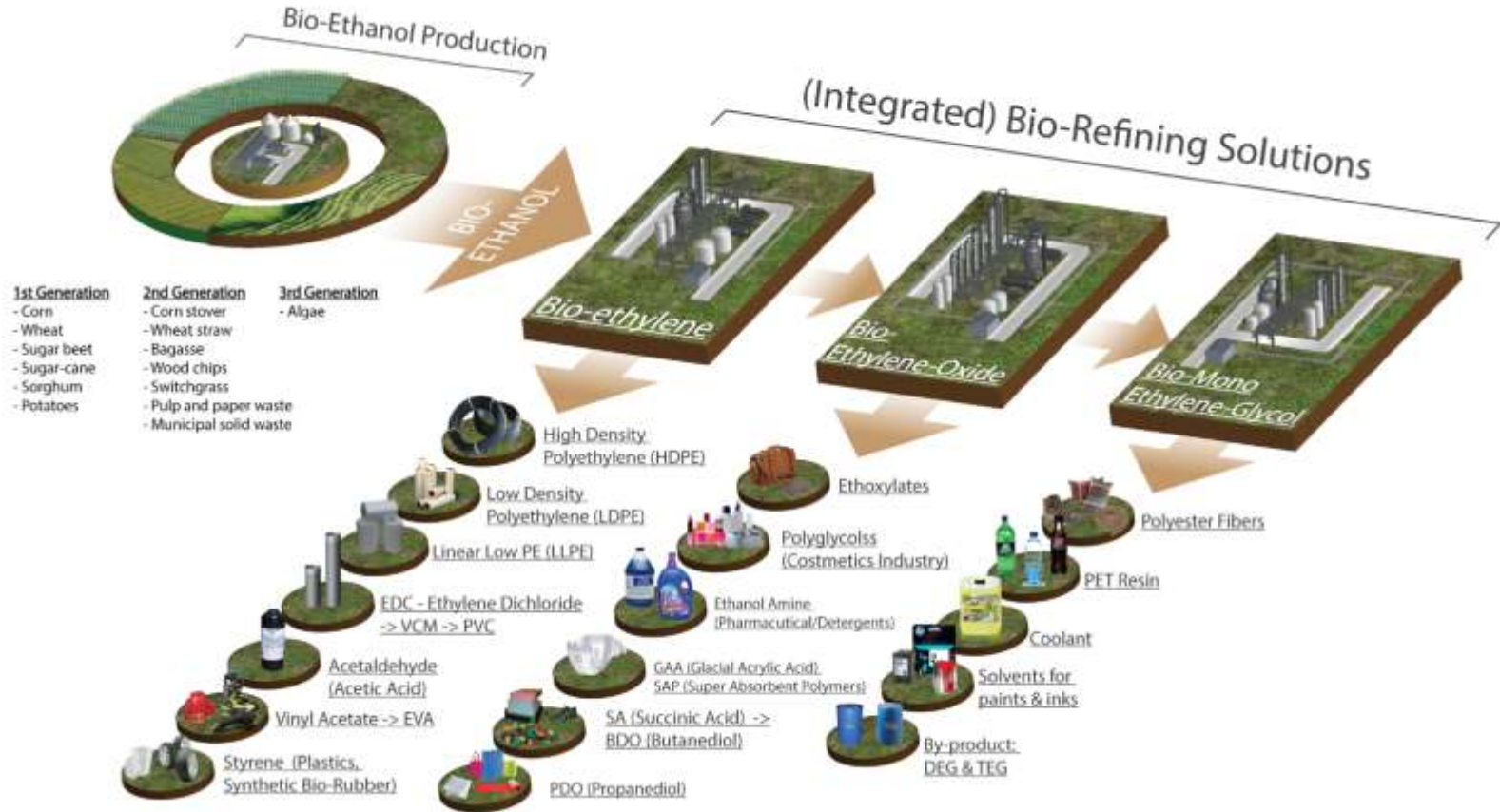


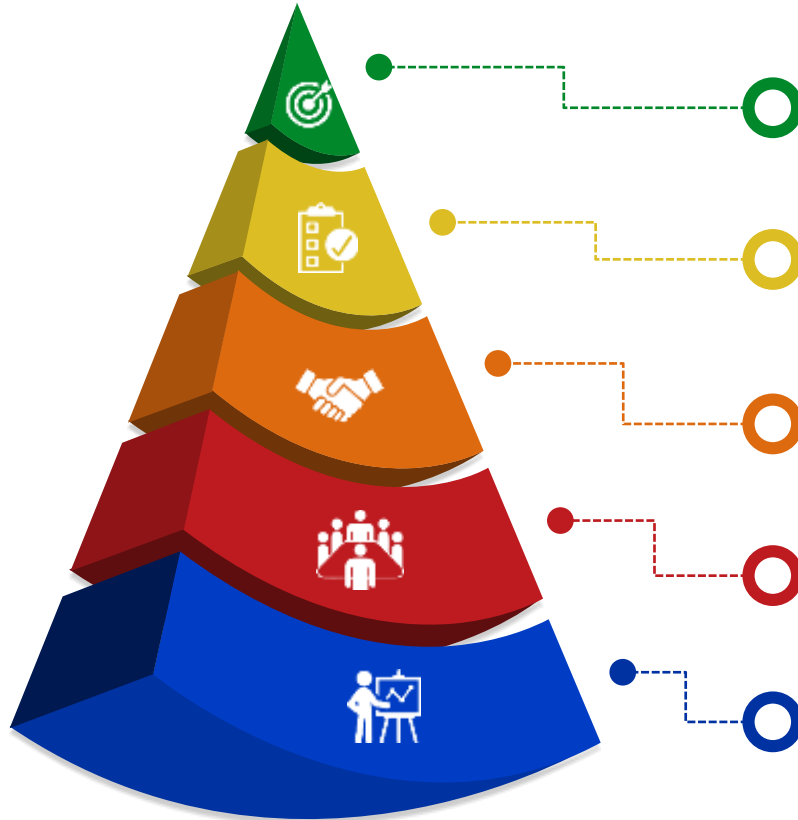
Contaminated Soil Remediation

PuriSoil[®]



BIO-Refinery CONCEPT





Upon confirmation of **firm project scope, schedule & costs**:

- **Finalize agreements** with offtakers, investors and financiers
 - **Start with EPC** (Engineering, Procurement and Construction) for the project
- Start with **Basic Engineering** of the Project
 - Align **overall utility and infrastructure**
 - Initiate **site preparation** works
 - Align **partners, investors and financial institutes**
- **Project strategy** optimizing the risks & opportunities
 - **Signing of agreements** and start of process design
 - Letter of Intent for **offtake guarantees**
- **Team available** to support such a program
 - Initiate discussion for **achieving guaranteed offtake**
 - **Feasible project** and facility
 - Align **technology** licensors
- **Favorable business environment**
 - Development of **Base Concept**
 - Apply **proven technologies** / processes

JILIN ZHONGXIN GROUP

- AWARDED IN 2010
- 90 kTA ETE integration with HPEO
- HPEO = 120 kTA, EG = byproduct
- Successful Start-up Q4 2014

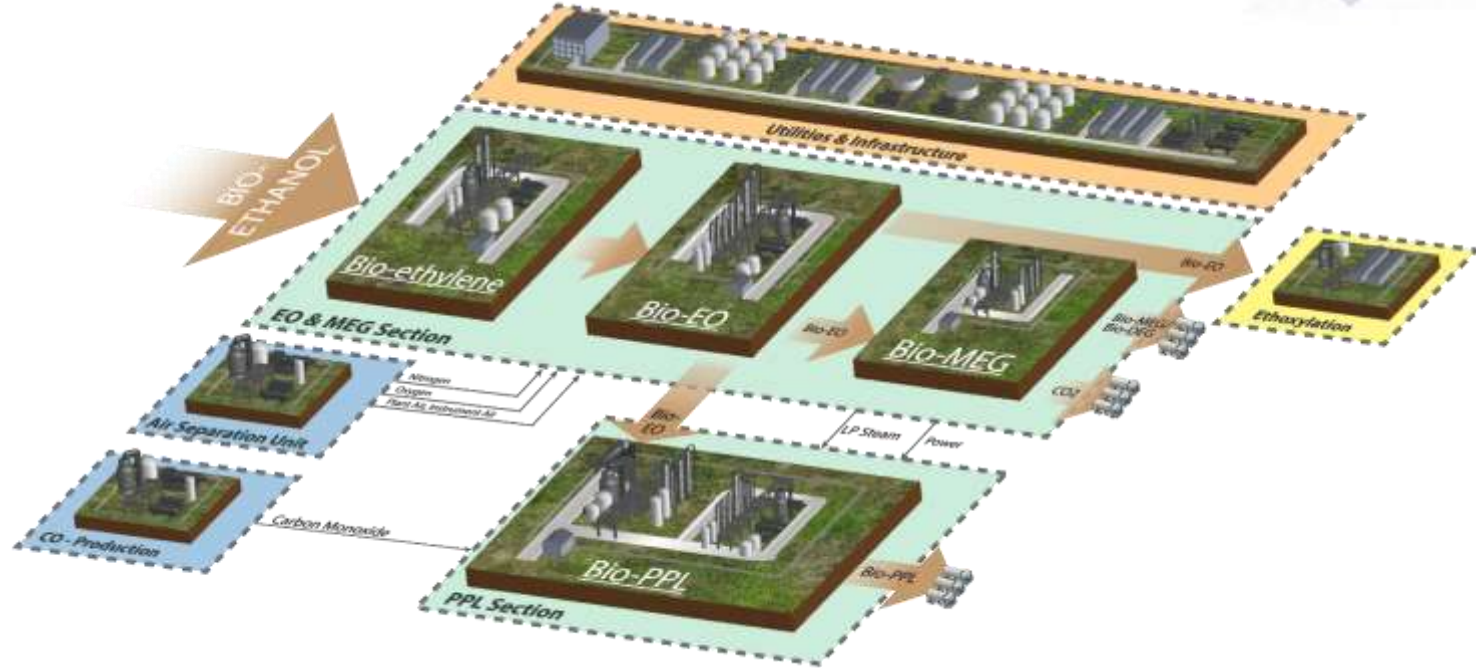


GRENCOL TAIWAN CORP.

- **AWARDED IN 2010**
- Project executed by Chemtex
- JV of CMFC and Toyota Tshuho
- 100 kTA ETE for **MEG** and **BIO-PET**
- **IN OPERATION**

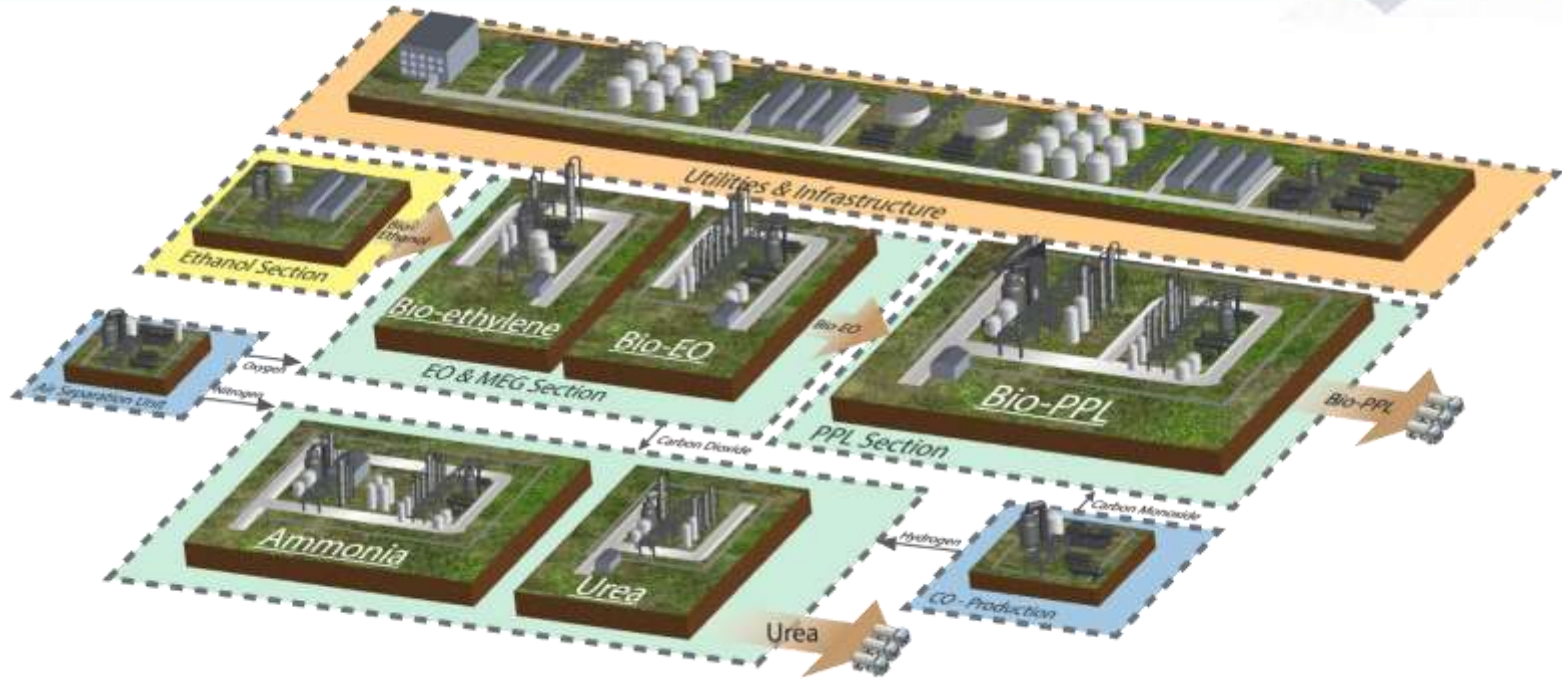


Biokim Project in Turkey



| Bio-Ethanol Required | Bio-Ethylene (intermediate) | Bio-Ethylene Oxide Produced | Bio-Ethylene Oxide Produced for sales | Bio-MEG Produced for sales | Bio-PPL Produced for sales |
|----------------------|-----------------------------|-----------------------------|---------------------------------------|-----------------------------|----------------------------|
| 240 - 250 KTA | ~140 KTA | 200 KTA | ~23 KTA | 25 KTA (50 KTA capacity) | 240 KTA |

South Africa



| Bio-Ethanol Production | Bio-Ethylene (intermediate) | Bio-Ethylene Oxide Produced | Urea Produced for sales | Bio-MEG Produced for sales | Bio-PPL Produced for sales |
|------------------------|-----------------------------|-----------------------------|-------------------------|----------------------------|----------------------------|
| 240 – 250 KTA | ~140 KTA | 200 KTA | Confidential | ~13 KTA | 310 KTA |



Thank you



Contact Us

For more information about the technology and applications, don't hesitate to contact our business associates. We would be glad to help you in achieving sustainable business!

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