

# GTS

GreenTech Solutions



# **GreenTech Solutions**

*The IDEA Factory*

*for*

*Chemical Process Development*

*and*

*Implementation*



# Value

- ✓ **We advance your chemical process to the next level**

- ✓ Recycling
- ✓ Upcycling
- ✓ Green chemical engineering

- ✓ **Our process engineering solution competence**

- ✓ Technical evaluations
- ✓ Scale-up
- ✓ Plant engineering & construction



# Green Chemical Engineering

- ✓ Inherent Rather Than Circumstantial
- ✓ Prevention Instead of Treatment
- ✓ Design for Separation
- ✓ Maximize Efficiency
- ✓ Output-Pulled Versus Input-Pushed
- ✓ Conserve Complexity
- ✓ Durability Rather Than Immortality
- ✓ Meet Need, Minimize Excess
- ✓ Minimize Material Diversity
- ✓ Integrate Material and Energy Flows
- ✓ Design for Commercial “Afterlife”
- ✓ Renewable Rather Than Depleting

**MINIMIZE WASTE &  
MAXIMIZE EFFICIENCY**

**LIFE CYCLE THINKING**

**SAFE & CLEAN PROCESSES**



# About us

## Expertise

Chemicals

Recycling

Biofuels

Biotechnology

Digitalization

## Experience

Worldwide active for 25 years

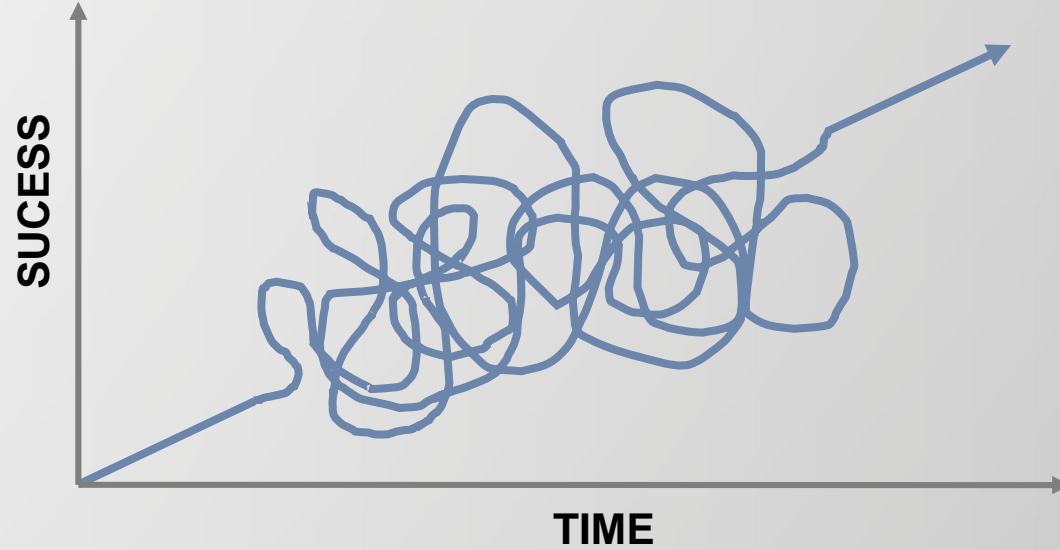
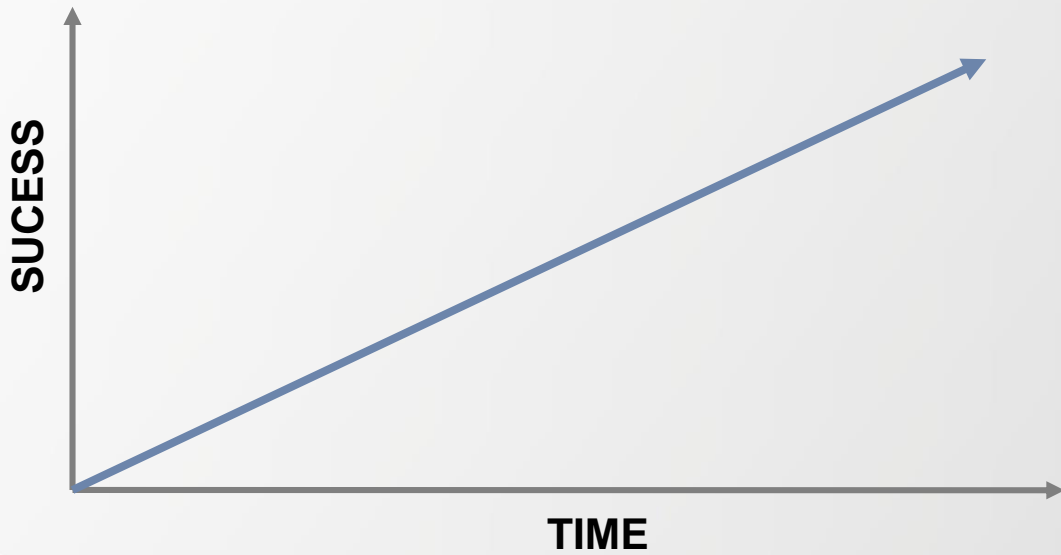
+80 industrial reference projects

+40 industrial reference plants

One-stop-shop projects



# Dream vs. Reality



# Reference-Technologies



## Biotechnology

- +10 years of experience in algae cultivation
- In-house development of technology
- Astaxanthin production in Styria



## BioCrack

- Biomass-to-liquid technology
- Converting lignocellulosic biomass to biogas, biofuel and bio coke using liquid flash pyrolysis



## BioGas

- Production of Biogas from a wide range of industrial and municipal waste products
- Engineering, construction, consulting



## Phosphor Recycling

- Phosphorus recycling from sewage sludge ash
- Scale-up of process from lab-scale to an industrialized standard

*Who benefits  
from green  
technologies ?*

**GTS**  
GreenTech Solutions

*...without  
solutions?*

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