

Clean chemicals: CO₂ + sunlight

GROOT TKI-OVERLEG IN DEN BOSCH
10TH OCTOBER 2018
PRESENTING – ROSS GORDON

Recent news

Akzo en Photanol starten groene fabriek in Delfzijl

AkzoNobel Specialty Chemicals, de dit voorjaar verkochte chemie-divisie van AkzoNobel, gaat samen met Photanol een demonstratiefabriek voor organische zuren neerzetten in Delfzijl. Die zuren worden geproduceerd uit CO₂ door geprogrammeerde bacteriën en met zonlicht als energiebron. Met de investering is een bedrag van €8 milio... De bouw start in 2019 en duurt een jaar.
De organische zuren, zoals die door de Amsterdamse vin jaar oude start-up Photanol worden...

Versatile platform; broad capabilities

THE NEXT INDUSTRIAL BIOTECHNOLOGY PLATFORM

Cyanobacteria are long proven R&D workhorses to study photosynthesis
Cyanobacteria have high potential to become the leading cell factory for industrial production using CO₂ and sunlight
Capable of replicating fermentation pathways currently implemented in E.coli and Yeast*

PROVEN BREADTH OF PLATFORM CAPABILITY OF 17 COMPOUNDS

Photanol cell factory

* Assuming the enzymes utilized are not oxygen sensitive

Photanol - history & future

Government support is crucial

Driving the transition

Staged approach to commercialisation





Pilot Plant
kg
TRL – 5/6
2012-2018

- Scalable PBR module
- 2 products tested
- Lab-scale up
- Pilot runs (leg product)



Demo Plant
Tonnes/year
TRL – 7
2018-2020

- 4-25 Ha modular system
- Differentiated DSP
- Production circa 10 Tpa

- Outside Pilot facility, Amsterdam 2019-2020
- Container Pilot, Zernike Campus, RUG 2018-2020



Commercial Plant
k.Tonnes/year
TRL – 8
2021+

- Integrated DSP
- Compound specific




Multi-plants/licenses
k.Tonnes/year
TRL – 9
2027+

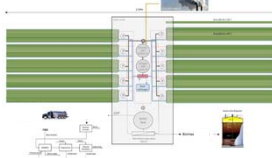

- Proven technology
- License model
- Target intermediate markets

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Demo Plant in Delfzijl





Geographic Location	Netherlands	
Surface Area	0.25	ha
Total PBR length	25	km
Total PBR Volume	100	m ³
Dynamic Acid Production	150+	tonnes/year
CO ₂ Capture	20+	tonnes/year
Biomass Production	4+	tonnes/year


Example of a PBR system
(image shown is of a 2 hectare system in the Netherlands)

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Back ground video (autoplay)

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