

Date **08.2022**

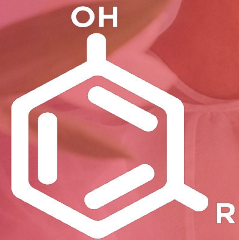
Company TRL **4**

Seeking **Seed Funding**

Amount Sought **650,000+ €**



Sustainable Bio Petrochemicals Replacements  
from the Shells of Cashew-Nuts  
with **total market potential in 10Bn+ €/annum**



(Patented: WO2014041344)

**CASHEW-SHELL  
BIO-REFINERY™**



# Current Problem

Summer 2022  
the hottest on record

but, performance, food-origin  
and/or price strongly limit the  
direct substitutes available!

Global Warming is real !

Mn. of tonnes of polluting  
chemicals must be phased out.

Industry must adapt  
for less pollution!



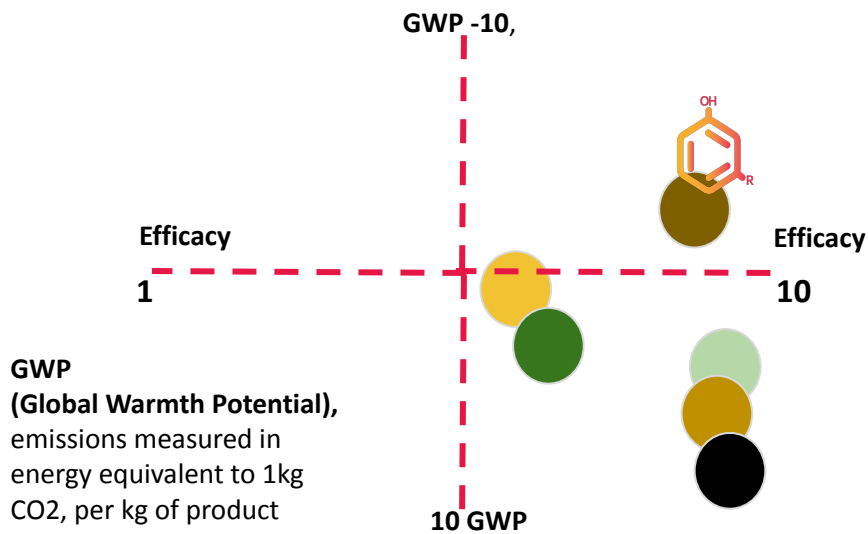
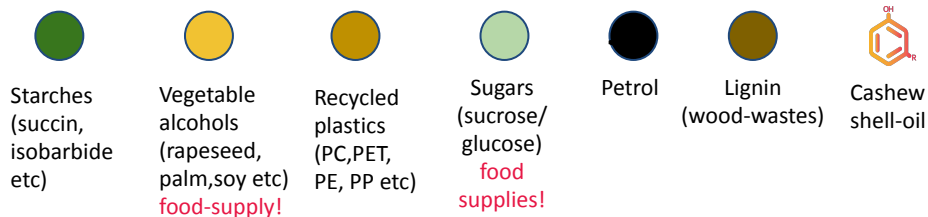
# Our solution with CSBR



a **bio-oil** is extracted from the shells and then processed

- ✓ **Cashew-Shells are a waste**, not competing with land and food
- ✓ **Ready** available **supply-chain** and affordable costs
- ✓ **4.8 MTn of shells** between Africa, India, Vietnam and Brazil
- ✓ Potential for **500 KTn of performing carbon-neutral chemicals**
- ✓ Up to 500 KTn of potential **petrochemicals replacements**
- ✓ Potential in **Millions of Kg of CO2 cut** from the environment

# Cashew-Shell-Oil vs other Feedstocks



Increased Performance



Carbon-neutrality



Limited Hazard



Approachable Value

# CSBR vs other Cashew-Shell-Oil Tech

## Other Cashew-Shell Tech



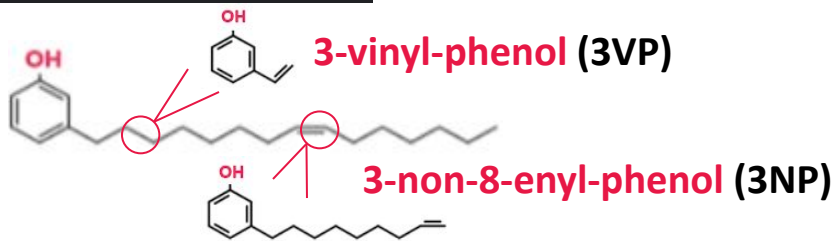
Cashew Shell Oil

- can apply in manufacturing only
- limited performance

VS

## CSBR (Cashew Shell BioRefinery)

Breaks the oil structure in 2 points!



- 3 times as many products
- can apply across the whole industry
- increased performance



Versatile



IPR protected

# Key Markets

Total Market: 10Bn€ pa., based on cashew-shells availability .



**Pharma**  
1M€ per client pa.



**Insecticides**  
5M€ per Client pa.



**Fragrances**  
1M€ per client pa.



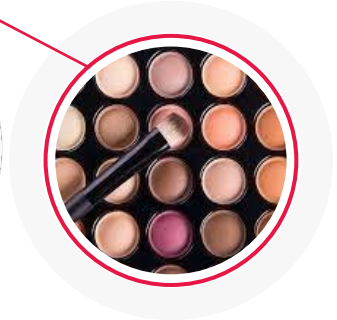
**Industrial Manufacturing**  
5M€ per client pa.



**Cleaning & Detergents**  
4M€ per client pa.

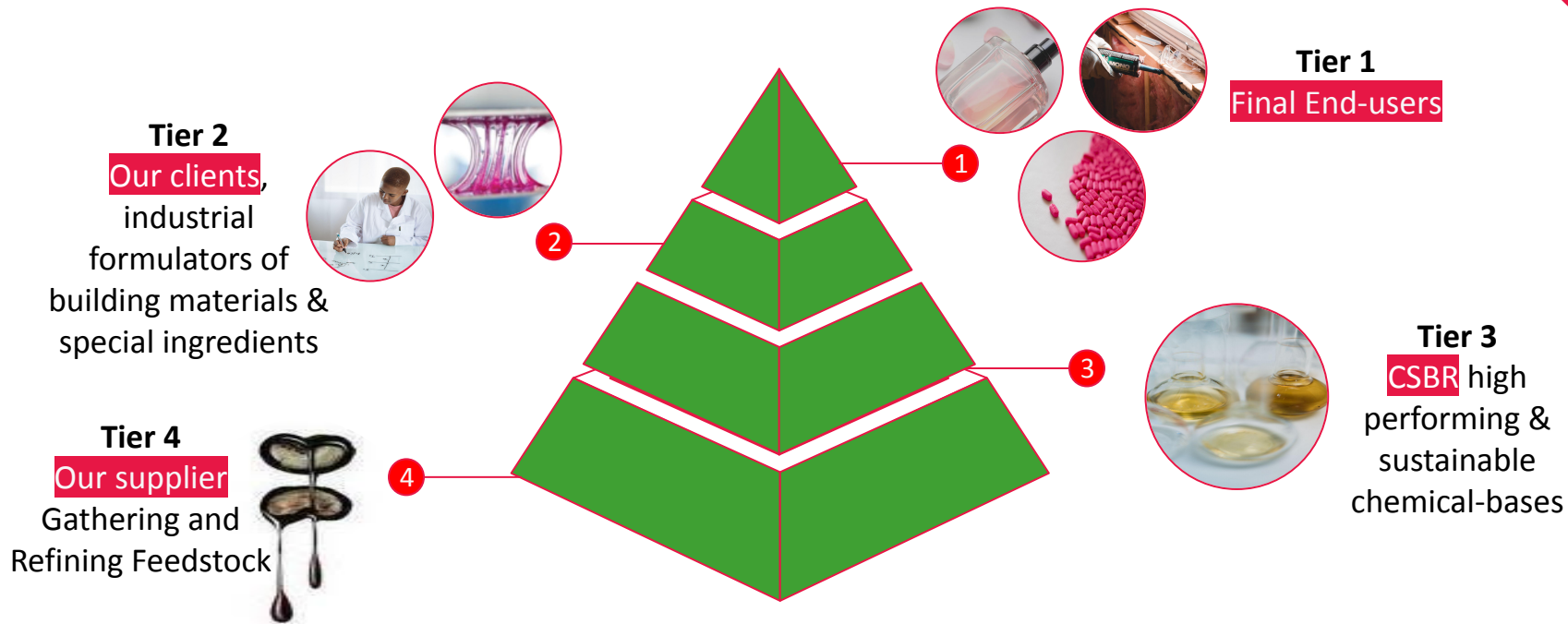


**Constructions**  
4M€ per client pa.



**Cosmetics**  
1M€ per client pa.

# Value in the SupplyChain

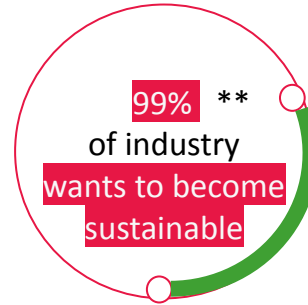
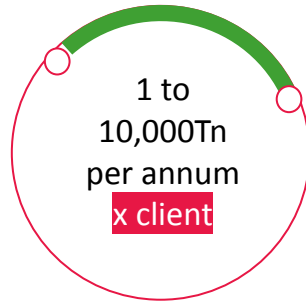


(with **Tier**, we refer to the level in supply-chain)

# Business Model, Figures



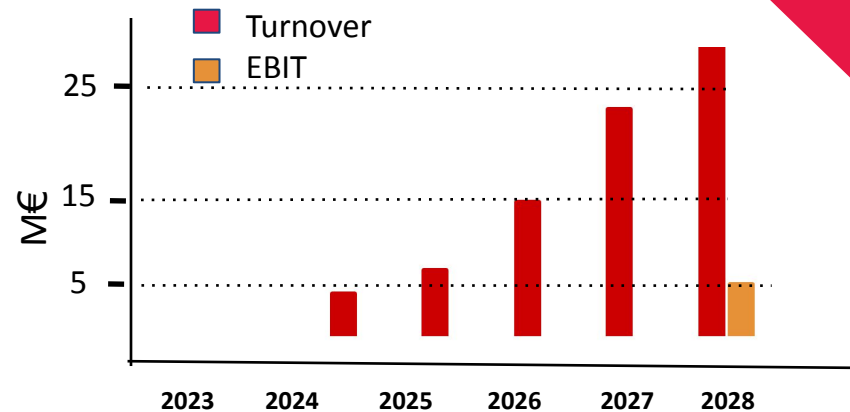
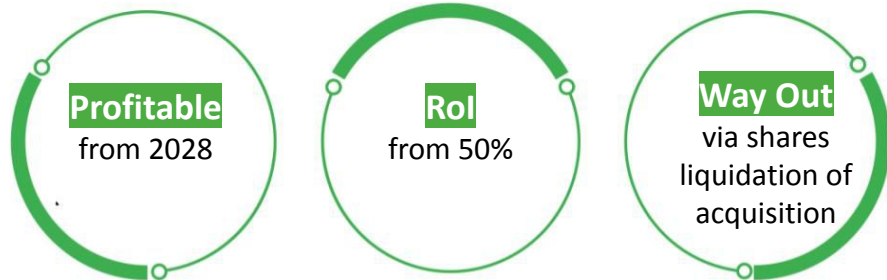
\* based on product,  
application and volume



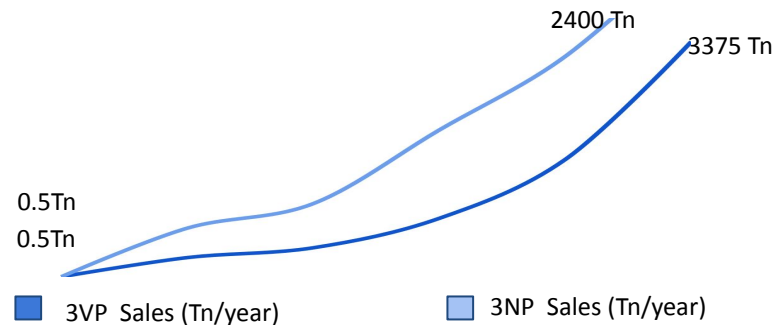
\*\* based on our  
market response



# Financial projections



## Overview Funding



# The Team: The core Investment



**David Cole-Hamilton**  
Technical Manager

Co-Founder, CTO and Emeritus  
Chemistry Prof. (St. Andrews Uni)  
World leader in catalysis



**Pierluigi Ferri**  
Business/CEO

Co-Founder and CEO, Expert in  
bio-products in industry;  
Business Dev. Green-Chemicals



**Thomas Seidensticker**  
Chemistry Process Engineer

Chemist and Young Research  
Group Leader, TU Dortmund  
Focused on catalyst-recycling  
projects



**Paul Webb**  
Partner Principal Researcher

Reader in Chemistry at St Andrews  
Chief Scientist, Industrial Research  
in catalysis of novel/improved  
polymers



**Philipp Kenyon**  
Postdoc Researcher

Associate at the Uni of St Andrews  
Experienced, industrial research in  
catalysis of high-value polymers



**Barrie Ainscow**  
Support & Applications Developer

Expert in Surfactants,  
Senior Industrial Q&C and  
formulator



**Stefano Massari**  
Advisor

CEO for over 35years in cashew  
industry, cashew-processing.  
Expert World Cashew Market.

# Our achievements so far with CSBR



## Unique Patented Technology

Methathesis reactions with cardanol and/or anacardic acid (WO2014041344)



## Demonstrated market opportunity

with potential in 10+bn eur pa, over 15-20 years



## Secured CNSL supply-chain

from Africa, India, Vietnam



Testing started with end user



£115k in fundings from clients & partners  
+80€ in in-kind contribution



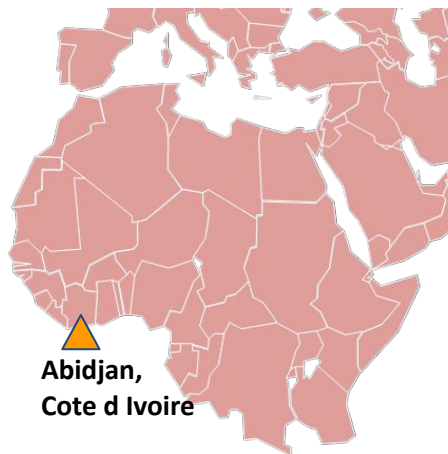
Interested investors waiting for a Lead



Formed a well-balanced team of professionals

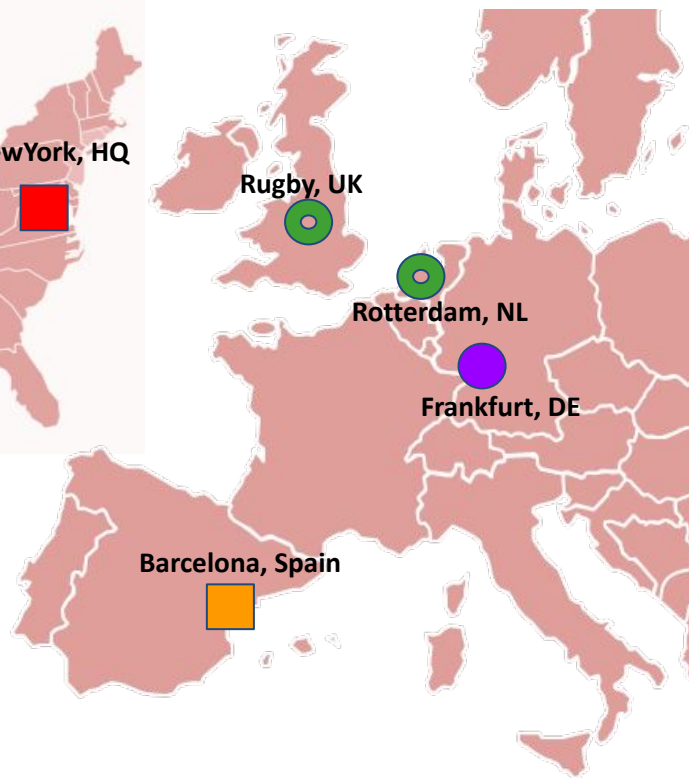
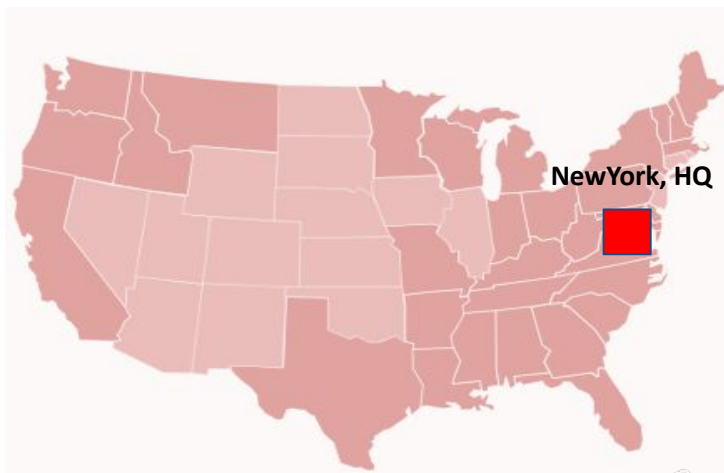
# CSBR, Company Organisation

- ▲ **CSBR LLC** (upcoming new entity)  
Cashew-Shell Oil Production



- ▲ **CSBR SARL** (upcoming new entity)  
Shell-Oil BioRefinery - production
- ▲ **CSBR BV** (upcoming new entity)  
Management & Shell-Oil BioRefinery  
Production
- **Uni St Andrews**  
R&D and Scale-up development  
center.
- **TU Dortmund**  
R&D and Scale-up development  
center.
- **Barrie Ainscow** (Manchester)  
development/distribution for  
end-products based on CSBR

# CSBR, Distributing Partners



**Aceto Group LLC**  
Distribution for coatings/adhesives, Fragrances & Pharma (USA)

**Ravago Group S.A.**  
Distribution for surfactant (Spain)

**DeMonchy International BV**  
Distribution for coatings/adhesives (Benelux)

**DeMonchy Limited**  
Distribution for coatings/adhesives (UK)

**Trigon Chemie GmbH**  
Distribution for coatings/adhesives (DACH)