

Pioneering
green solutions

Pioneering green solutions for a renewable chemical industry

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18.06.2025



verbio



Company profile

We are Verbio

We are a leading, independent producer of bioenergy and renewable carbon

For the **first time production** exceeded
> 1 million tons of biodiesel & bioethanol
> 1,000 GWh of biomethane (RNG)
~ 1400 employees

but

difficult market conditions in Germany/Europe

Turnover: -15,8% compared to last year

EBITA: in expected range 50% of FY22/23

FY23/24
1,658 m €
Turnover

121,6 m €
EBITDA

Frankfurt
**Stock
Exchange**
listed

~1,2 m t
renewable
carbon based
products

SILVER | Top 15%

ecovadis

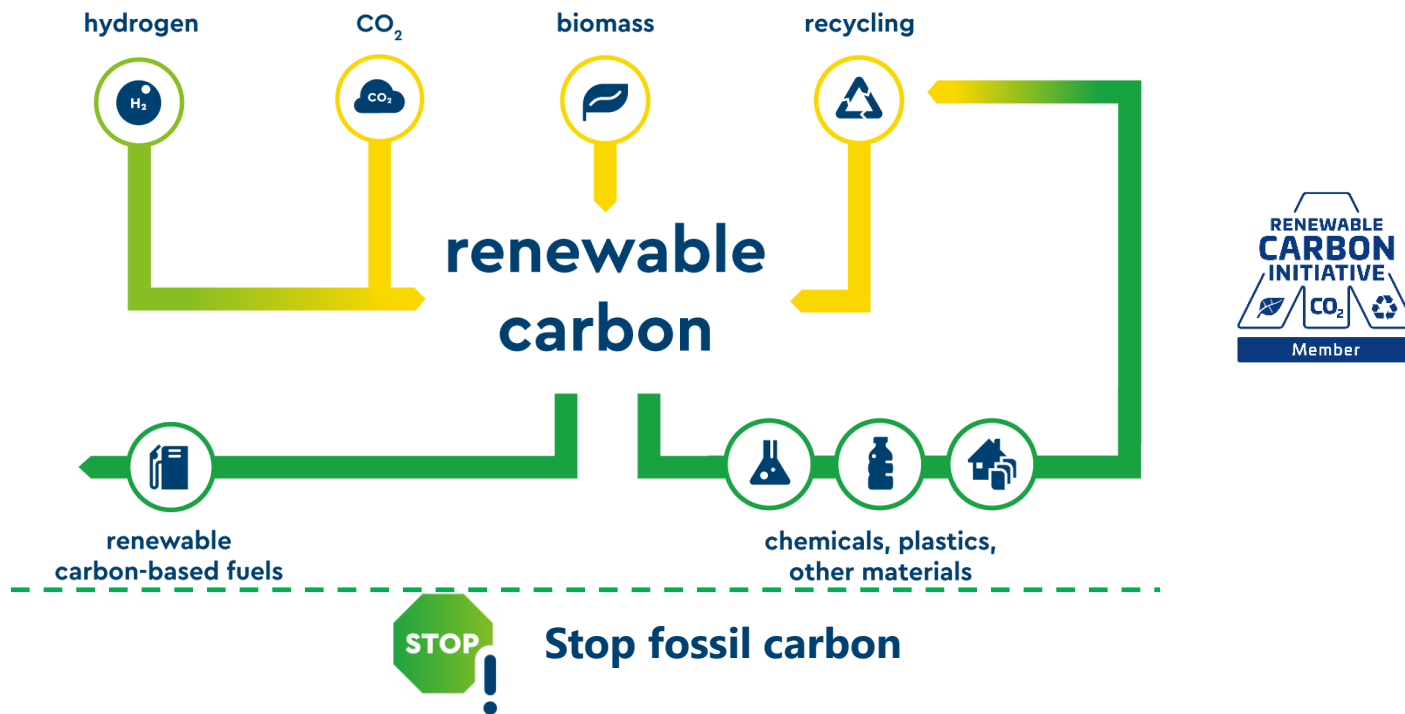
Sustainability Rating

OCT 2024

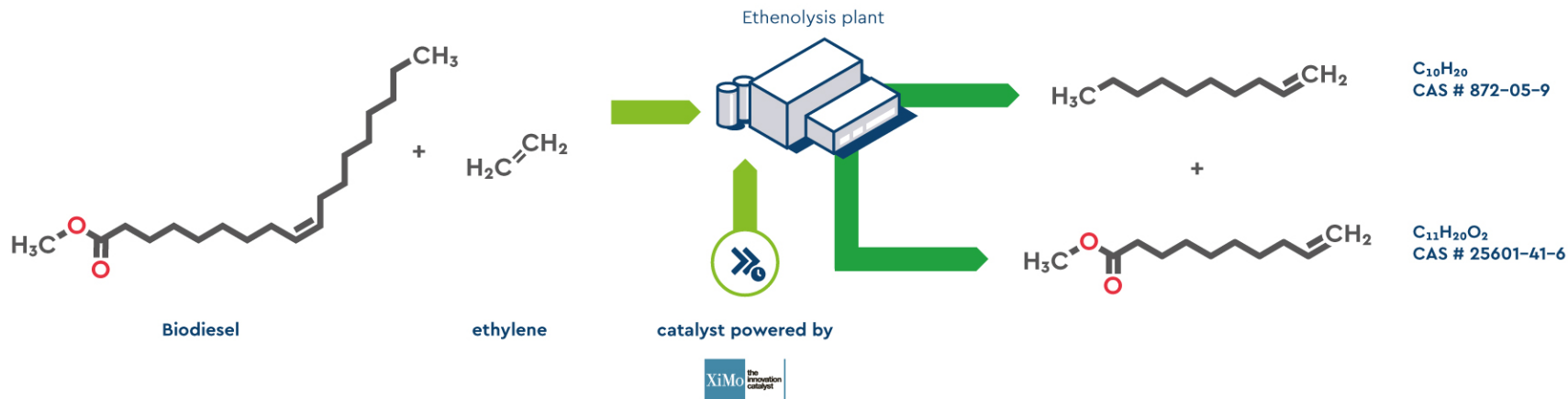
Green solutions

our renewable products
for chemical industries

Concept: Renewable carbon for the Chemical Industry



Renewable carbon products based on biodiesel



1-Decene



production volume:

17,000 t/a

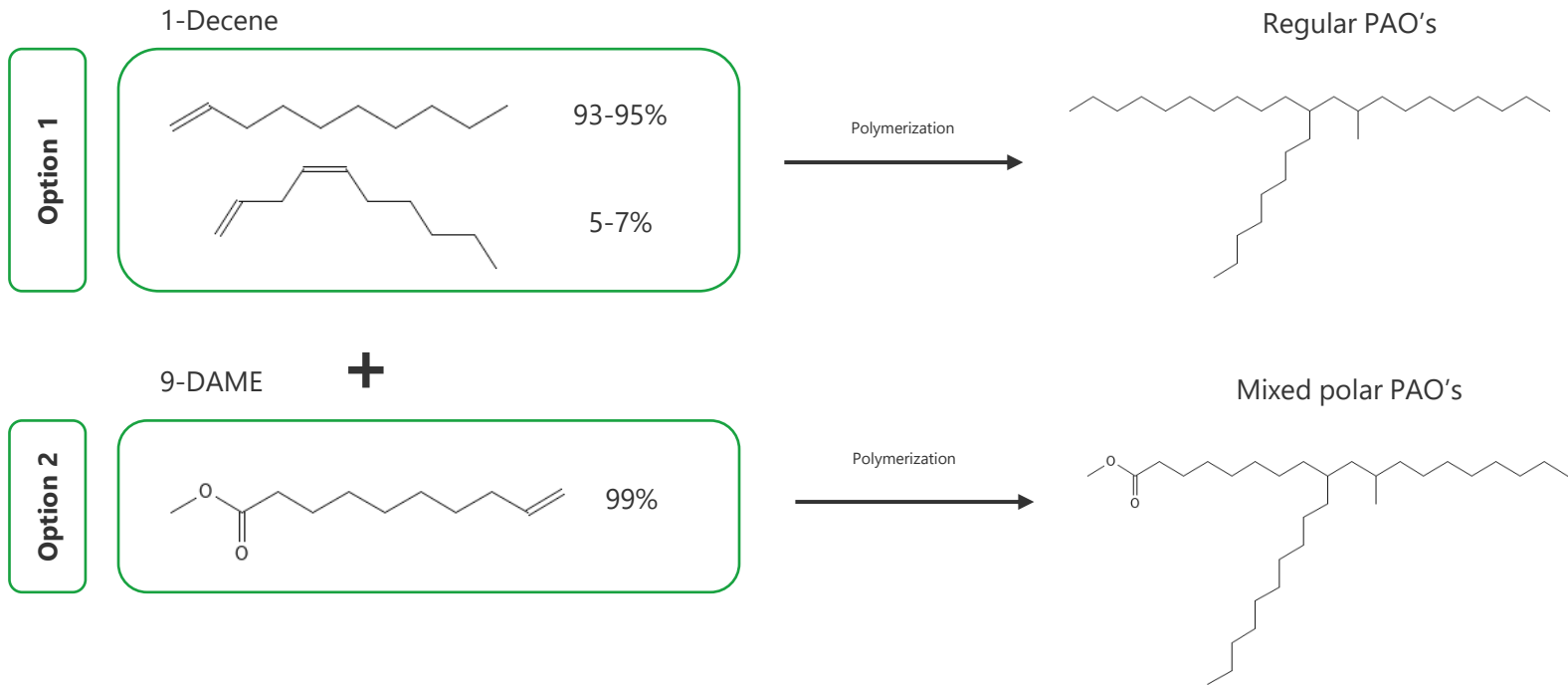
characteristics:

- Renewable Drop in 1-decene
- RCI = 0.9
- Enables customers to change existing products to a renewable source
- Known application as lubricant, as coating agent in food, in surfactants, in polymers
- e.g. Enables green PolyAlphaOlefins



**kg samples available
on request**

Renewable and biobased alpha olefins



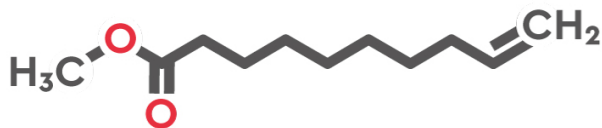
=> Verbio's Biobased α -olefins as feedstock for PAO's ???

Biobased 1-Decene and 9-DAME for PAO's

		Sample origin	Material	Viscosity [mm2/s] 40°C	Viscosity [mm2/s] 100°C	Viscosity index	Pour Point [°C]	Mol mass (GPC) Mn	Mol mass (GPC) Mw	PDI	Noack	Friction coefficient
Option 1	A	Verbio	93,5% 1-decene 6,5% 1,4-decadiene	232.68	26.48	146	-42	1.550	2.490	1,61	4.1	
	B	industry sample	98,7% 1-decene	196.26	23.83	150	-45	1.470	2.300	1,56	3.2	
	C	Verbio	93,5% 1-decene 6,5% 1,4-decadiene	76.12	11.42	142	-54	1.020	1.370	1,34	8.1	
	D	industry sample	98,7% 1-decene	99.13	14.41	150	-57	1.270	1.860	1,47	8.7	
Option 2	E	Verbio	90% Verbio 1-decene 10% 9-DAME	148.8	19.9	147	-51	1.490	2.330	1,57	6.0	
	F	Verbio	90% Verbio 1-decene 10% 9-DAME	95.3	13.7	145	-54	1.230	1.730	1,41	6.3	
		Commercial		66	10	137	-48					
		Commercial		61	9.6	141	-58				3.5	
		Commercial		62.9	9.6	137	-45				<3.5	

9-DAME

(9-Decenoic acid methyl ester)



production volume:

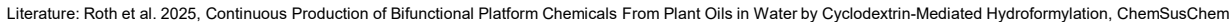
32,000 t/a

characteristics:

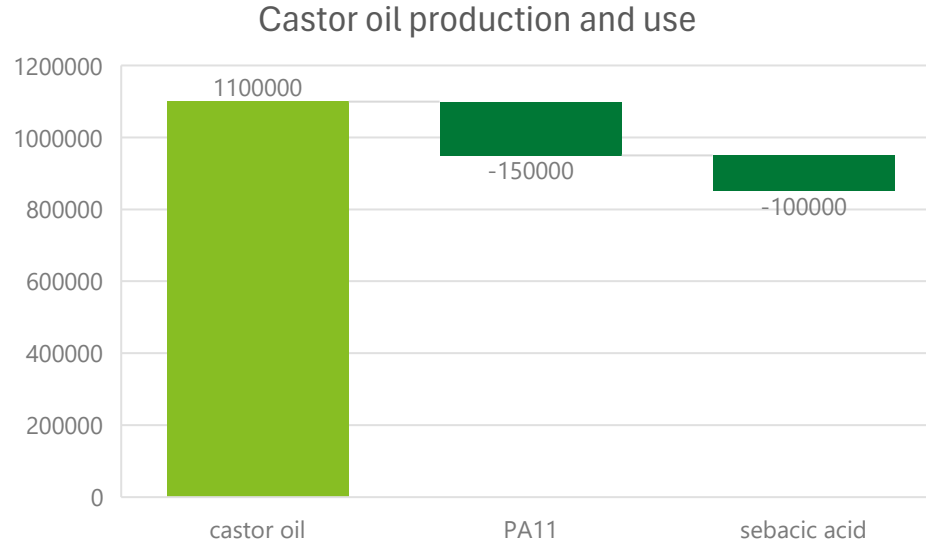
- Bifunctional renewable chemical
- RCI >0.8
- So far with limited supply for the industry
- Highly interesting chemical profile
- Based on European rapeseed oil
- Known applications in surfactants, lubricants, solvents and polymers



kg samples available
on request



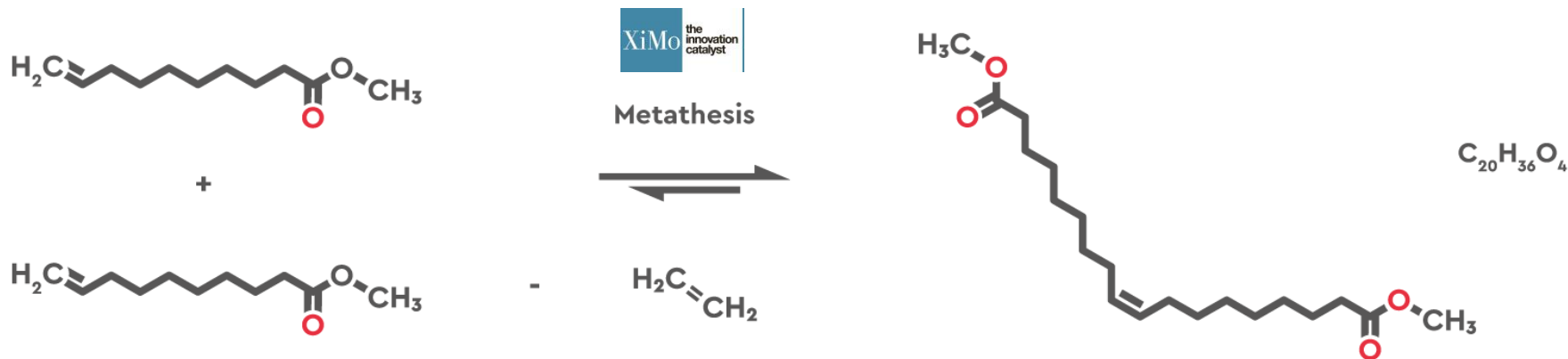
Availability of Castor oil and uses



1.1 Mio t of castor oil are used for PA11 and sebacic acid production

- Ethenolysis offers acces to C10 chains and derivatives independent of tropical oils

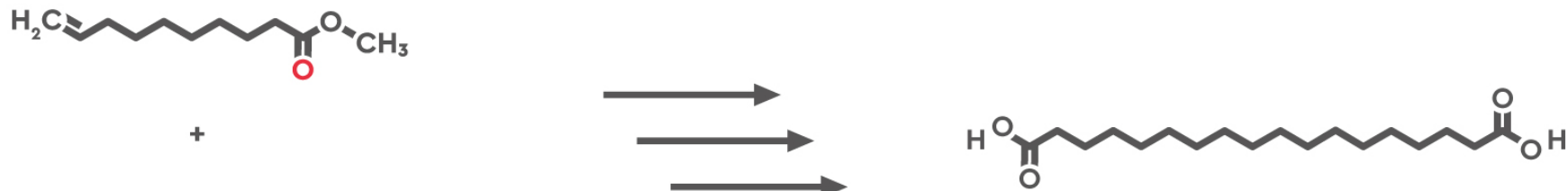
Z-9-ODDAME – extension of portfolio



Characteristics Dimethyl (Z)-octadec-9-enedioate (9-ODDAME):

- Z Isomer >95% (E possible)
- RCI = 0.9
- Low GHG emission profile
- Local European supply chain
- Natural building block for lubricants, PA, UP, PU, PELike and PEster

Octadecanedioic acid (ODDA) – extension of portfolio

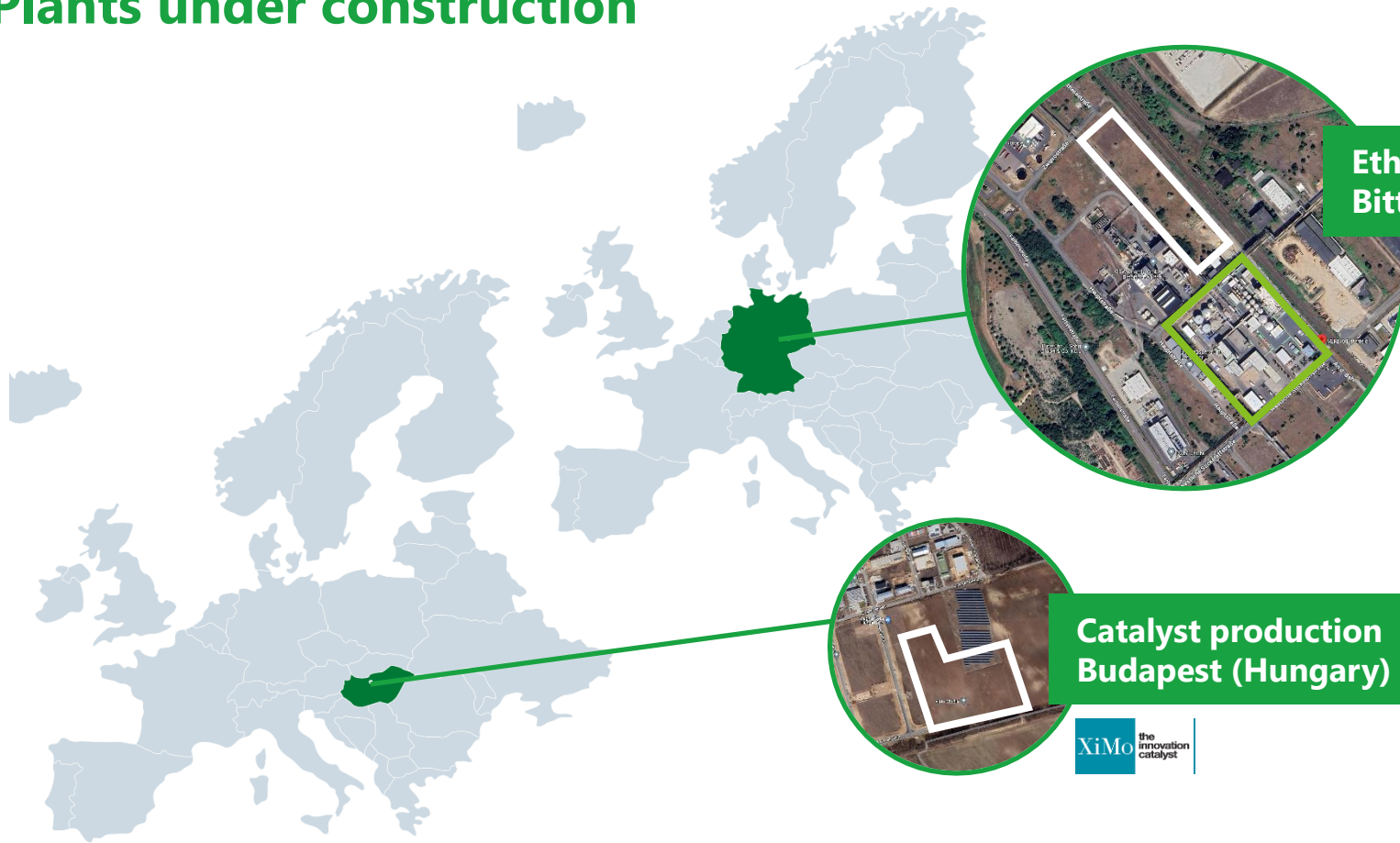


Characteristics Octadecanedioic acid (ODDA):

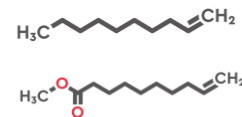
- High purity
- RCI = 1
- Low GHG emission profile
- Local European supply chain
- building block for PA, PU, PELike and polyester, lubricants...



Plants under construction

Verbio

Ethenolysis plant, Bitterfeld (Germany)

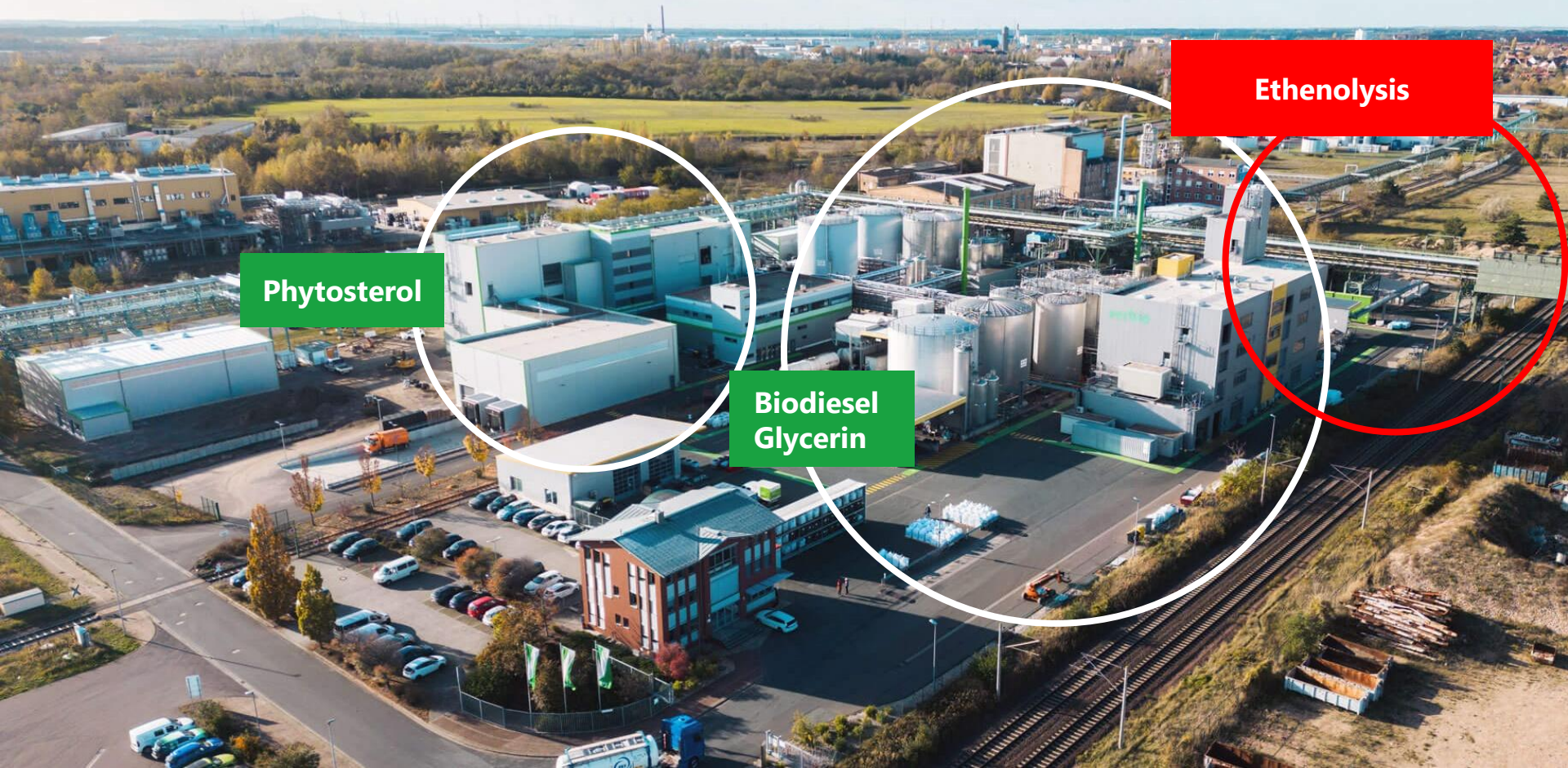


Catalyst production Budapest (Hungary)

Catalyst production
Catalyst mg, kg, ton

Biorefinery in Bitterfeld (Germany)

verbio



Phytosterol

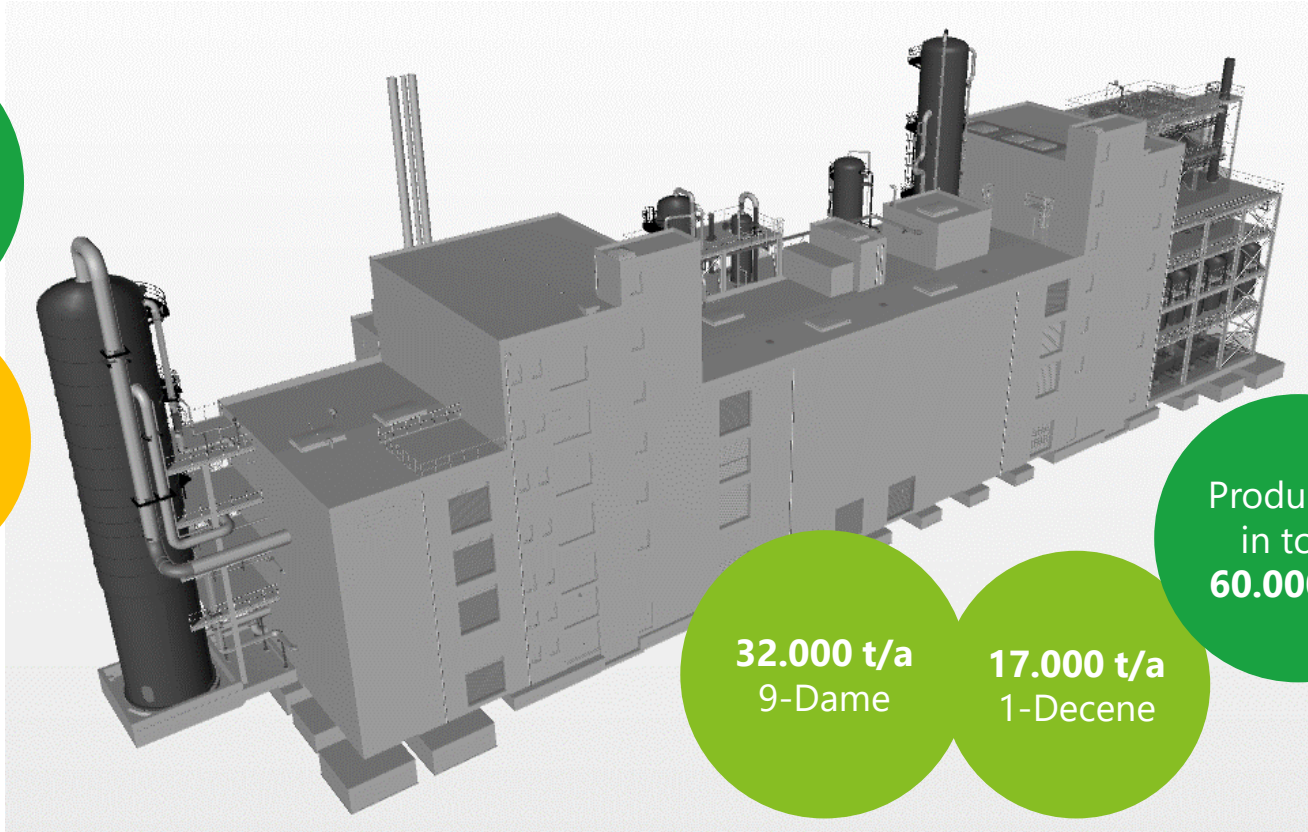
Biodiesel
Glycerin

Ethenolysis

Key facts Ethenolysis

Invest
80-100
Mio. EUR

50
new jobs



32.000 t/a
9-Dame

17.000 t/a
1-Decene

Production
in total
60.000 t/a

Bitterfeld ground breaking ceremony 14.05.2024

verbio

Wir machen Chemie grün!

Hier entsteht die weltweit erste
Ethenolyse-Anlage zur Herstellung
biobasierter Chemikalien.

Pioneering green solutions

Bitterfeld site 25.11.2024



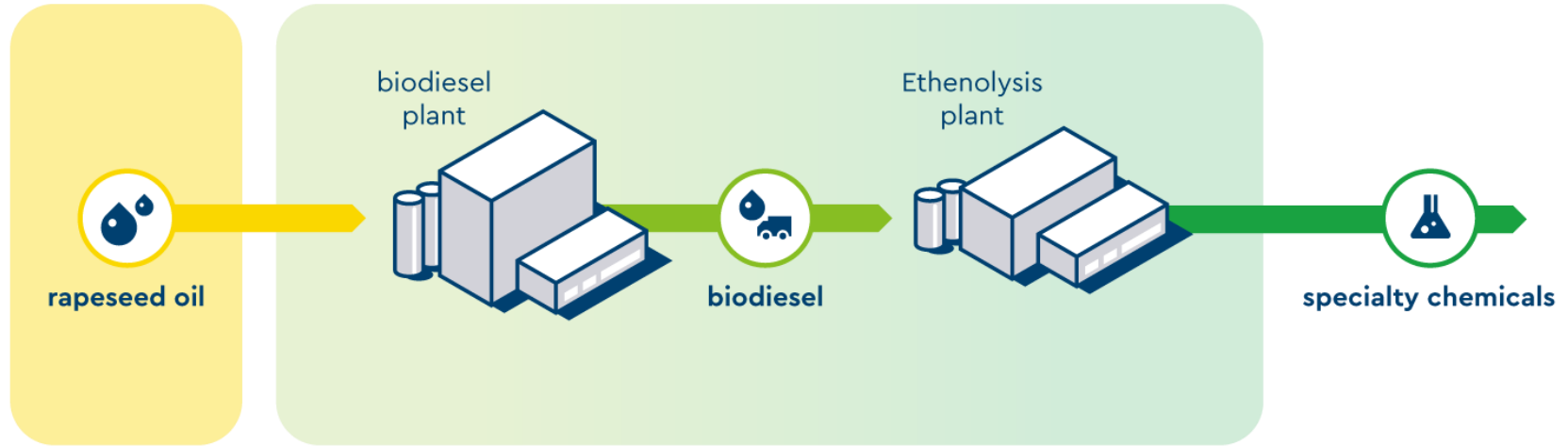
Bitterfeld plant 25.04.2025



Bitterfeld plant 11.06.2025



Biodiesel to product



- Redirect existing biomass streams from energetic to material use

XiMo metathesis catalysts



ID X1037

Formular $C_{41}H_{74}Cl_2P_2Ru$

MW 800,96



ID X1038

Formular $C_{44}H_{67}Cl_2N_2PRu$

MW 826,97



ID X052

Formular $C_{58}H_{57}BrMoN_2O$

MW 973,95



ID X211

Formular $C_{46}H_{52}Cl_2N_2O_3SiW$

MW 1123,56



ID X994

Formular $C_{49}H_{57}Cl_2N_2ORuS_2$

MW 926,11

Summary

- Verbio will provide about **60 kta** of biobased renewable carbon products to specialty chemicals industry
- Verbio's specialty chemicals starting 2026
- Verbio's main products **9-DAME** and **1-DECENE**
- Verbio's products are based on RME with low CO₂ footprint
- **Mo/W** and **Ru** based metathesis catalysts production at scale



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and Catalysts

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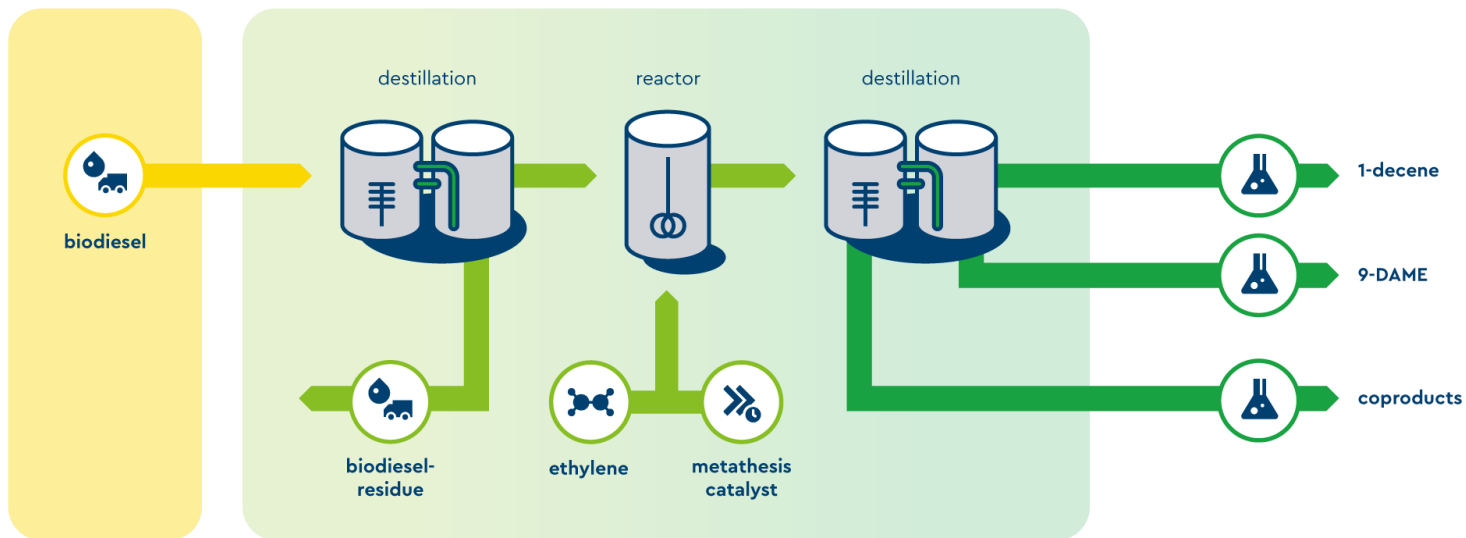
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Ethenolysis plant concept



XiMo
the innovation catalyst

