



**PYRUM INNOVATIONS AG**

**Roundtable**

31 March 2025

**A**

**Company  
& Market**

**B**

**Best Practice**

**C**

**Finance**

**D**

**Outlook**

# A

Company  
& Market

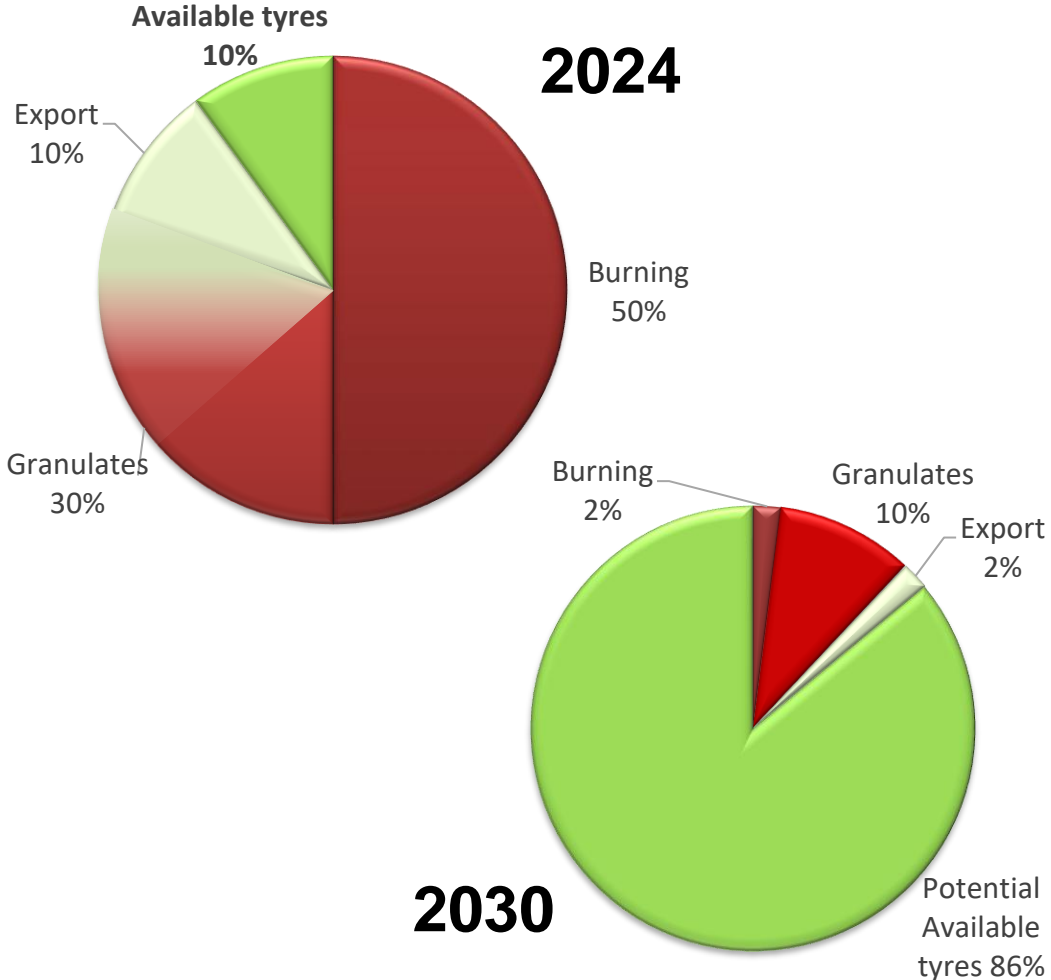
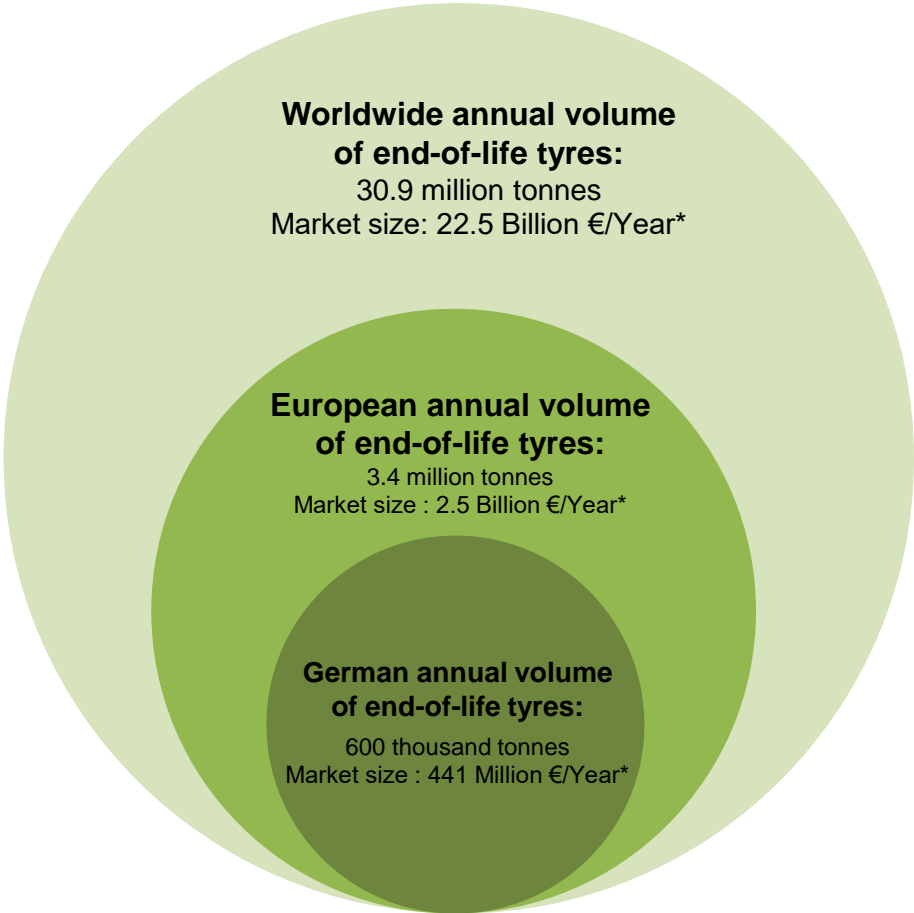


# Global End-of-Life-Tyre (ELT) market accounts for approx. 30.9 mt p.a.

... as tightening regulatory environment forces countries and corporates to take action

## Market size of end-of-life tyres

## Global ELTs Market comparison 2024 to 2030 (estimations Pyrum)



\* Based on 100 €/ton Gatefee, 250 €/ton Steel, 550 €/ton Pyrum Oil and 1.200€/ton rCB



# Tightening regulatory environment

... Landfill Ban



## Landfill Ban



The landfill of End-of-Life-Tyres and shredded tyres is prohibited

# Tightening regulatory environment

... Ban on incineration



## Ban on incineration

Prohibition of burning rubber products  
 Prohibited the use of shredded tyre granulate outdoors



# Tightening regulatory environment

... Ban of rubber granulates



## Ban of Rubber granulates

**Summer 2023:** EU has decided to forbid the use of rubber granulates for certain uses (microplastics) => 30 % of used tyres are used for this purpose

# Tightening regulatory environment

... OEM Audits are requiring circularity grades



## OEM Audits are requiring circularity grades



The market is pushing for new raw materials, **Official Continental goal 100% Circular until 2050**





# Tightening regulatory environment

... Increased Tyre Export 2024

## Increased Tyre Export in 2024



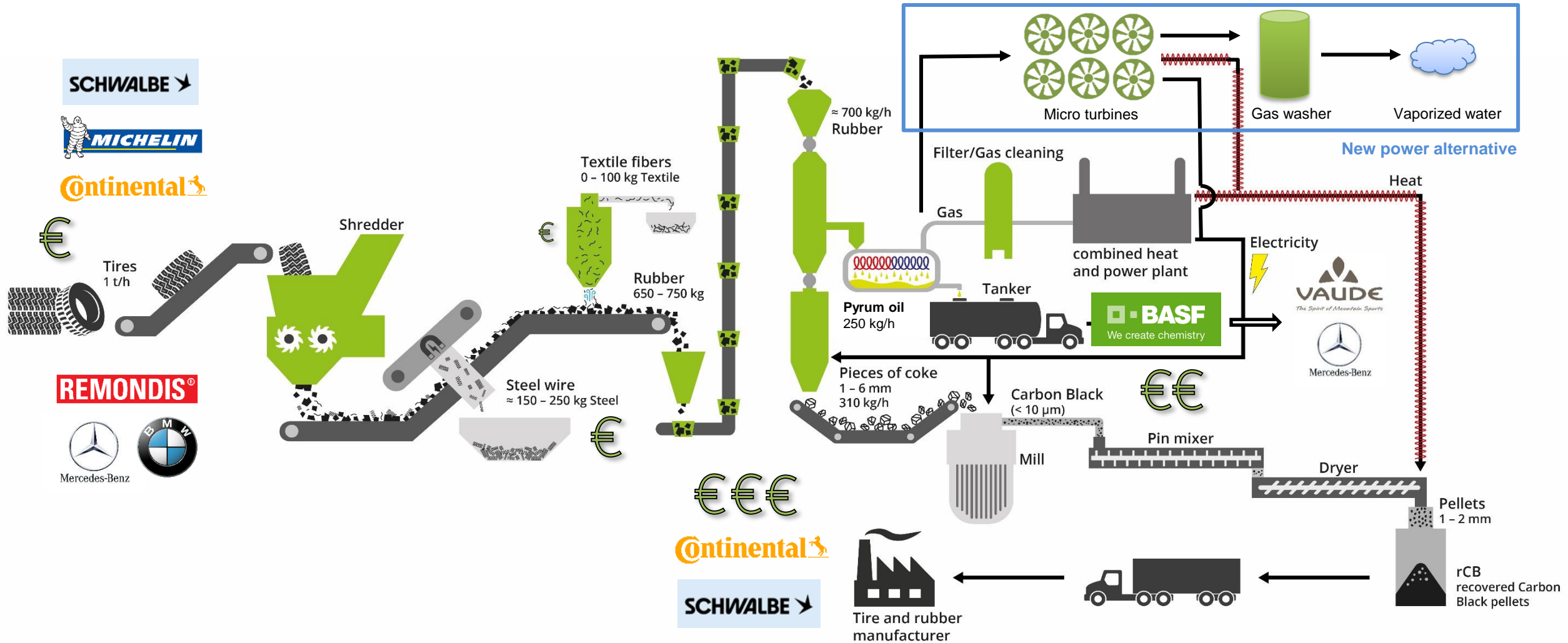
Burning of tyres starts to slow down in 2024, the new alternative is export to Turkey and India => illegal!



# Pyrum offers patented technology with strong value proposition...

... converting rubber into several high value chemical products – thermolysis oil, carbon and gas

## How Pyrum creates value










# News and Facts on TAD 2 & 3

Sky view September 2024

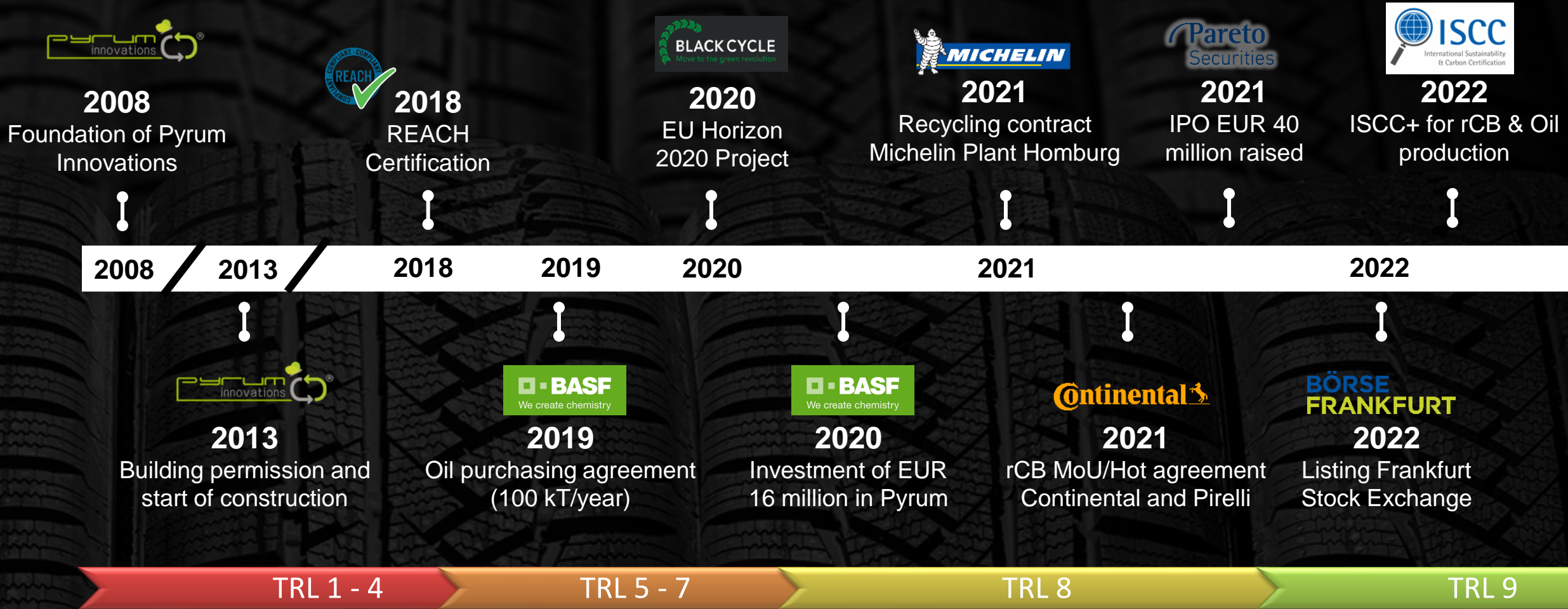
Status quo TAD 2 & 3



- 
**Eldan Shredder:**  
 6 to/h tyre input =  
 600 car tyres/h
- 
**Pyrum Reactors 2&3**  
 725 kg/h per reactor
- 
**Gas Turbines:**  
 5 turbines with  
 150 kW/e each
- 
**Exhaust Gas Washer:** including  
 water treatment
- 
**Hosokawa Mill and Pelletizer:** 1,650  
 kg/h input capacity
- 
**Oil Storage:**  
 2 x 60,000 liters  
 underground
- 
**Pyrum Control Room:** for 3  
 parallel operators



# Pyrum History



# Pyrum History



2023

IMUG ESG Rating „Very Good“



2023

First 100 % rCB Bike Tire “The Green Marathon”



2024

Successful Warm Ramp Up Line 2+3



2024

RSC Certificate for textile industry



2024

Successful Warm Ramp up Line 3



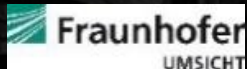
2024

Cash capital increase of EUR 10 million

2023

VDA 6.3

2024



2022

High Class LCA with Fraunhofer



2023

rCB Offtake Agreement (Continental)



2023

New cooperation agreement and loan agreement



2024

City Council Agreement for new Plant in Perl-Besch



2024

Conversion to 70 % of production with Pyrum rCB



2024

Long term agreement with Continental for rCB



2024

Two new patents for rCB and CFRP

TRL 9

# Pyrum History (now)

Thermo Lysl SA

2025

Project in Greece has received permit



2025



2025

The Czech partners SUAS GROUP and Sokolovská uhelná received FID



2025

VTTI and Pyrum partner to develop waste tyres recycling thermolysis plant in Antwerp

TRL 9

# Life Cycle Assessment (LCA)

Results better than expected

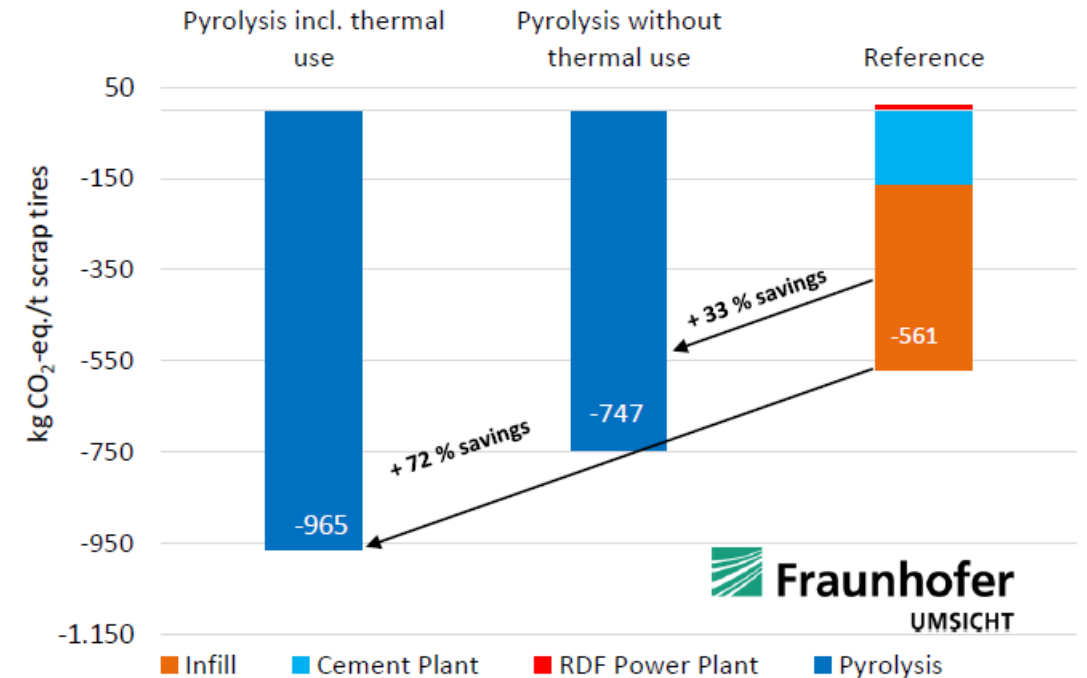
## Explanations

- The LCA was conducted independently by **Fraunhofer Umsicht** in the Year 2022 and 2023
- The results of this LCA are exclusively sourced from the Pyrum Thermolysis technologie and can not be compared to other Pyrolysis technologies using other equipment.
- Comparison of CO<sub>2</sub> savings between different recycling methodes used today. The Question was: „**How much CO<sub>2</sub> can be saved using these recycling methodes instead of fossil fuels or raw materials**“:
  - **EBS Power Plant:** + 164 kg / per to of used tyres
  - **Cement Plant:** - 395 kg / per ton
  - **Material recovery:** - 778 kg / per ton
  - **Pyrum:** - 965 kg / per ton

} **244% CO<sub>2</sub> Savings**
- Only material recovery is approaching the savings of the Pyrum technologie and represents a good combination for some waste streams.



## LCA-Graph Fraunhofer



Source: Maga, D.; Aryan, V.; Blömer, J. (2022): Comparative Life Cycle Assessment of End-of-Life Options for Used Tires; Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT



# B

Best Practice





# Real applications of circularity

## VAUDE Outdoor Equipment and Clothing

**VAUDE**  
The Spirit of Mountain Sports

Wonach suchst du?

Händler Service Über VAUDE | DE

DAMEN HERREN KINDER AUSRÜSTUNG SPORTART MIETEN

Kostenloser Versand ab 30 € Klimaneutrale Produkte Fair und partnerschaftlich

Herren | Beliebt & Neu | Altreifen-Recycling

### Altreifen-Recycling

Robuste Produkte - klimafreundlich durch Recycling von Altreifen

Chemical Recycling

Raw material compound system

Mass balanced fabric

#### Massenbilanz Altreifen-Recycling – was ist das?

Reife(n) Leistung für dich und das Klima! Unsere Textilien unter Verwendung eines Massenbilanzverfahrens sind klimafreundlich, hoch funktionell und tragen gleichzeitig zur Lösung eines großen Abfallproblems bei, das von Altreifen verursacht wird. VAUDE setzt hier eine Technologie ein, die aus schwer recycelbaren Kunststoffen Öl gewinnt und dieses wiederum in einem zertifizierten Massenbilanzierungsverfahren dem System der Polyamid-Herstellung zuführt. Das daraus gewonnene, nachhaltige Polyamid ist genauso funktionell wie ein herkömmliches Polyamid, spart aber bei der Herstellung ca. 60 % an CO<sub>2</sub>-Emissionen ein!\*

\* Chemcycling, Environmental Evaluation by Life Cycle Assessment, BASF, November 2020 GdBI version 9.2 (2020), Sphera AG, Polyamide 6 Granulate

[Erfahre hier mehr zu Massenbilanz Altreifen-Recycling](#)

**VAUDE**  
The Spirit of Mountain Sports

Wonach suchst du?

Händler Service Über VAUDE | DE

DAMEN HERREN KINDER AUSRÜSTUNG SPORTART MIETEN

Altreifen-Recycling

Comyou Pro Fahrrad Regenjacke Herren

200,00 €

Altreifen-Recycling

Neyland Halfzip Anorak Unisex

220,00 €

Highlight

Neyland gefütterte Winterjacke Herren

230,00 €

Altreifen-Recycling

Neyland Winter-Weste Herren

130,00 €

Altreifen-Recycling

Strathcona II Winterhose Herren

140,00 €

Altreifen-Recycling

Farley Stretch T-Zip III Hose Herren

120,00 €

Altreifen-Recycling

Farley Stretch Zip-off II Hose Herren

100,00 €

Altreifen-Recycling

Farley Stretch III Outdoor Hose Herren

100,00 €

Altreifen-Recycling

Yaras Shorts Fahrrad Hose Herren

120,00 €

Altreifen-Recycling

Yaras Zip-Off Fahrrad Hose Herren

150,00 €

## Real applications of circularity

Continental Tyres since September 2023

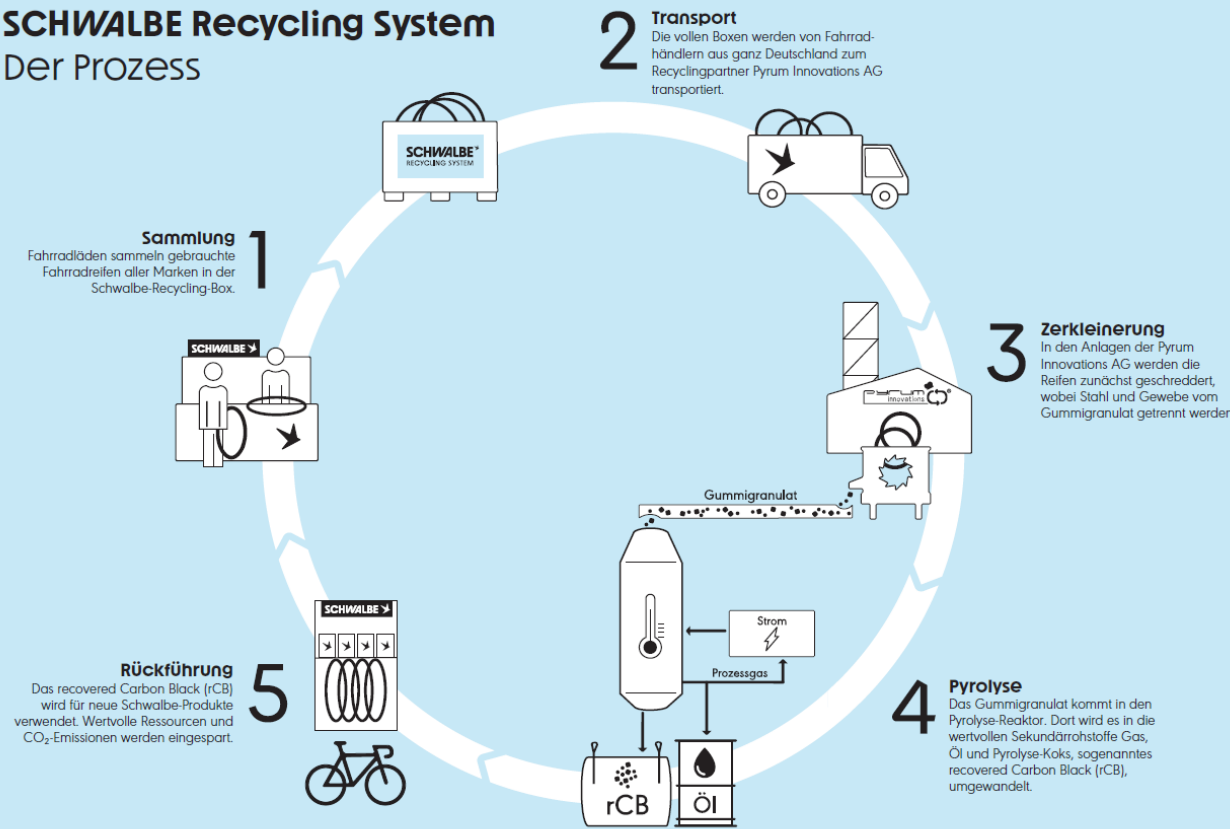


- ❖ Solid tyres from Continental's tyre plant in Korbach now contain recovered carbon black from end-of-life-tyres
- ❖ By 2050 at the latest, Continental aims to use **100 percent sustainable materials** in its tyre products
- ❖ Solid tyres produced since Calendar week 23 2023 contain Pyrum rCB
- ❖ New offtake agreement for rCB signed in July 2024
- ❖ **Guaranteed offtake for 10 year** for base price of more than **double the price at Pyrum IPO.**

# Real applications of circularity

## Schwalbe Recycling System and „THE GREEN MARATHON“

### SCHWALBE Recycling System Der Prozess



- ❖ Already **1.800 bike stores** in Germany are participating = almost 1/3 of German market.
- ❖ The first **100% Pyrum rCB tyre** was released at the EUROBIKE in June 2023
- ❖ To date, more than **1,000,000** bicycle tyres have already been recycled and returned to the cycle
- ❖ Official announcement to switch **70%** at the whole Schwalbe production to Pyrum rCB.
- ❖ Schwalbe is **Pyrum shareholder** since November 2024

# Real applications of circularity

## Mercedes-Benz door handles

### FROM CAR TYRE TO DOOR HANDLE

Mercedes-Benz is achieving a closed-loop material cycle with chemical recycling

3 ... to produce a virgin-quality high-performance plastic\*

2 Combined with **biomethane** from agricultural waste ...

1 **Pyrolysis oil** is created from scrap tyres as a replacement for fossil resources

4 **Door handle manufacturing**  
More components from chemical recycling to follow

\*Based on biomass balance approach



# Important Milestones in the Rollout Plan

*New Plants all around Europe!*

Map of running projects



## Key Facts

### PROJECTS

In Pipeline	Started projects	New projects in 2024
> 20	10	5
Number of countries	Permitting in progress	Permits granted
6	7	2

### Business numbers of started projects

Recycling volume:	180,000 tons/y
% of EU ELT market:	5.2%
Investment volume:	> EUR 500 million
Oil volume:	45,000 tons/y (100% sold)
rCB volume:	55,000 tons/y (25% sold)



# Extensive project pipeline due to attractive framework conditions

*Demand is higher than capacity; projects are partly far advanced or have been started procedurally*

## Project status

	Project Nr.	Country	Partner/Site	General Terms Agreed /LOI	Contract / Pre-Engineering signed	Building site Secured / identified	Capital partly secured	Authorisation granted	Operative Company created	
100 %	1	Germany	Saarland	✓	✓	✓	✓	( ✓ )	✓	
SPV	2	Greece	Athen „Thermo Lysi SA “	✓	✓	✓	✓	✓	✓	
SPV	3	Cech Republic	Sokolov	✓	✓	✓	✓	✓	✓	
SPV	4	Germany	Bremen	✓	✓	✓	✓			
EXT	5	UK	SUEZ UK	✓	✓	✓	✓			
SPV	6	Germany	Emleben	✓		✓	✓			
100 %	7	Germany	Hessen oder NRW	✓						
EXT	8	Belgium	Antwerp	✓	✓	✓	✓			
SPV	9	DE & Europe	Unitank 2-10	✓						
SPV	10	Sweden	Billingsford	✓	✓	✓			✓	



New in the last 12 months



Older than 12 months



# Important Milestones in 2024

## New Pyrum Plant in Perl/Besch

### Facts

- **Size of building site:** 25,000 m<sup>2</sup>
- **Annual tyre capacity:** 20,000 tons
- **Units build:**
  - Tyre shredder 8 tons/h
  - Pyrum reactors 3 units
  - Gas power plant
  - Mill- and Pelletizer 1,650 kg/h
- **Investment:** EUR 50 million
- **New employees:** 40-45
- **Annual turnover** EUR 17 million
- **Planned operation**
  - Tyre shredder: 16h/day
  - Pyrum reactors 24/7, 3 weeks
  - Gas power plant: 24/7, 3 weeks
  - Mill- and Pelletizer 24/7
- **Distance to nearby logistics**
  - Railway (DB): 0 meters
  - Harbor (Mosel): 100 meters
  - Highway (A8): 6 km

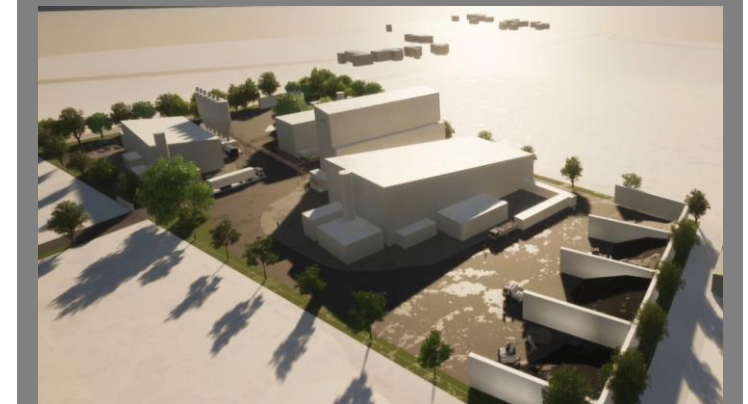
### Milestones

- **Amendment of the development plan in Perl-Besch in only 5 months!**
  - Successful transformation to „Industrial Area“ in a record time. Normally 2-3 years!
- **Clearing of the building area in only 2 weeks.** Site is prepared to start building
- **No public involvement from now on!** The Amendment of the development plan has secured the green light from the public and all authorities: DB, Telekom, Firefighters, Police, Nabu, BUND, Wasserstraßen- und Schifffahrtsverwaltung des Bundes, Electricity Supplier etc.
- **Operating permit according to BImSchG is accomplished and discussed with the permitting authority.** Permit to start building expected in Q2 2025
- **Operating company founded: „Pyrum GreenFactory II“**
  - Legal form: GmbH
  - Owner: 100% Pyrum Innovations AG
  - Equity: 5.9 Mio. EUR



PYRUM

### Plant Preview



# C

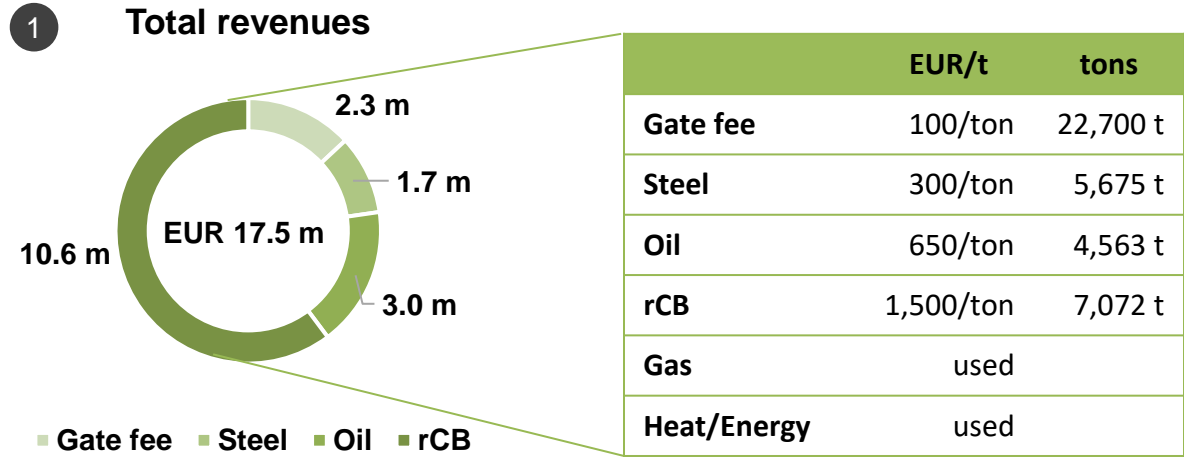
Finance





# Attractive plant economics is the enabler for the rapid roll-out

## Estimated plant economics – operating at 20,000 tonnes p.a. capacity



Direct costs	EUR ~ 2.6 m
2 OPEX	EUR ~ 4.9 m
3 EBITDA	EUR ~ 10.0 m
4 Investment	EUR ~ 50 m
4 Payback EBITDA basis	~ 5.0 years
3	

## Roll Out breakthrough:



- **Contract with BASF** for a loan of up to EUR 50 million



- Framework agreement for long-term acceptance of Pyrum rCB
- Unlimited delivery approval for the Pyrum recovered Carbon Black of the entire plant in Dillingen/Saar

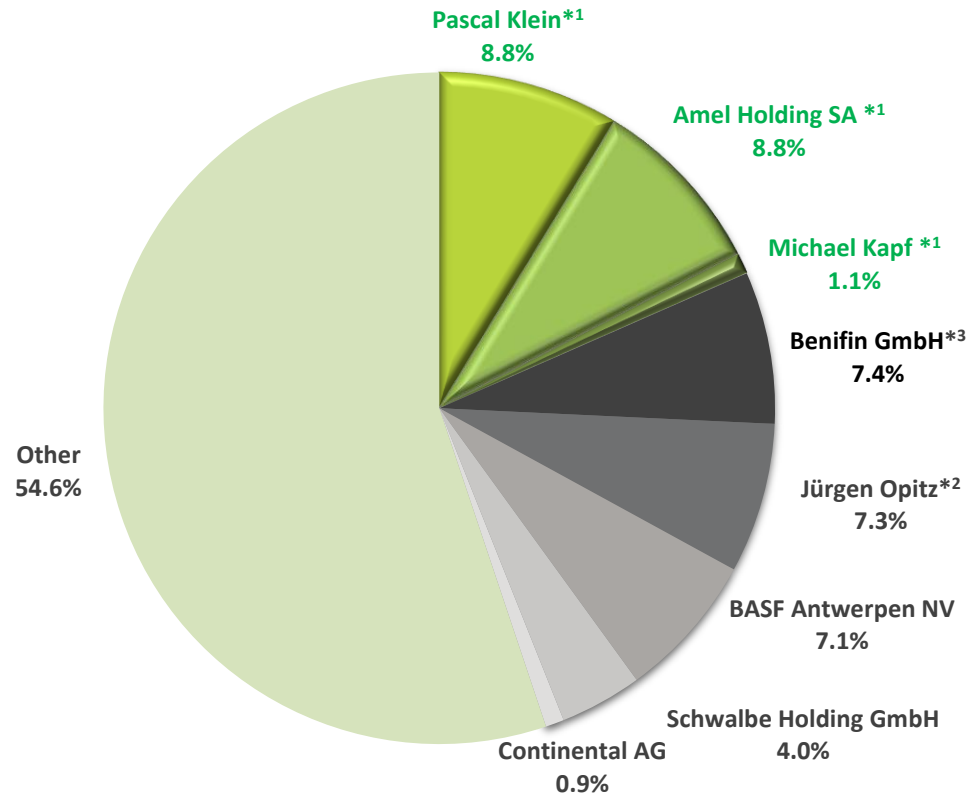


- **Cash capital increase**
  - Gross issue proceeds increase amount to approximately EUR 10 million
  - Number of shares increases from 3,253,735 to 3,617,372
- **MaxCap-test in TAD 2 & TAD 3**
- **Parallel operation** of all three production lines at the main plant in Dillingen/Saar



# Overview of the Pyrum share

## Shareholder structure of Pyrum Innovations AG

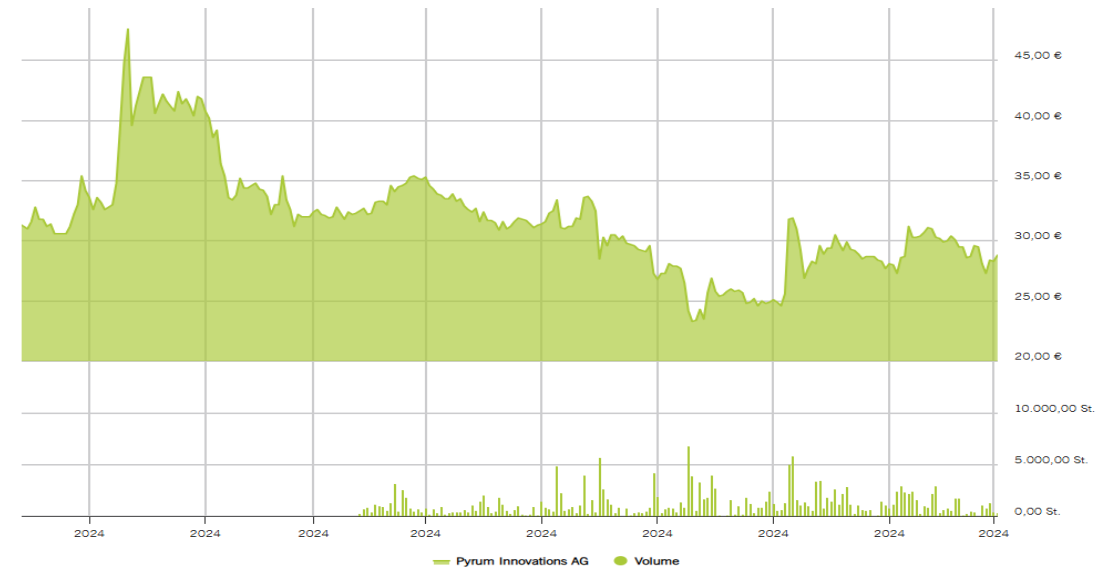


\*1 Major founding shareholders; \*2 Including attributable shares; \*3 Including indirectly attributable shares

## Pyrum share

Basic info	
ISIN	DE000A2G8ZX8
Ticker symbol	FRA: PYR; OSLO: PYRUM
Share capital	EUR 3,617,372,00
Trading segment	FRA : SCALE OSLO: Euronext Growth Market

## Pyrum's share price development in 2024



powered by DEUTSCHE BÖRSE CASH MARKET



# Preliminary consolidated financial statements

....for the period from 1 January to 31 December

## 2024

KPIs	Actual state (Preliminary)	Previous year	Δ EUR PL	Δ % PL
<b>Revenues</b>	<b>2,017</b>	<b>1,147</b>	<b>870</b>	<b>75.90%</b>
Increase of finished and unfinished goods	709	-60	769	
<b>Operating output</b>	<b>2,726</b>	<b>1,087</b>	<b>1,639</b>	<b>150.85%</b>
Other own work capitalised	7,468	11,712	-4,244	
<b>Total output</b>	<b>10,194</b>	<b>12,799</b>	<b>-2,605</b>	<b>-20.35%</b>
Other operating income	1,210	715	495	
Expenses for materials	7,883	11,420	-3,537	-30.97%
Personnel expenses	6,727	5,405	1,322	24.45%
Other operating expenses	4,165	3,734	431	11.55%
<b>EBITDA</b>	<b>-7,395</b>	<b>-7,088</b>	<b>-307</b>	<b>4.33%</b>
Depreciation and amortization	2,268	2,086	182	8.73%
<b>EBIT</b>	<b>-9,662</b>	<b>-9,174</b>	<b>-489</b>	<b>5.33%</b>
Other interest and similar income	15	92	-78	
Interest and similar expenses	1,235	430	805	187.14%
<b>Net loss for the year</b>	<b>-10,883</b>	<b>-9,511</b>	<b>-1,371</b>	<b>14.42%</b>
Other taxes	24	43	-19	
<b>Result after taxes</b>	<b>-10,858</b>	<b>-9,468</b>	<b>-1,390</b>	<b>14.68%</b>

## Last published forecast Q3 2024

<b>Revenues:</b>	<b>EUR 1.9 – 2.4 million</b>
<b>Total output:</b>	<b>EUR ca. 10 million</b>
<b>EBIT:</b>	<b>EUR -10.0 to -12.0 million</b>



# D

## Outlook



# What are the next steps and priorities?



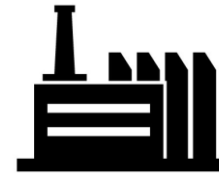
**Get access to funds to finance the second half of the roll out plan and Pyrum**

- **Running Bank Due Diligence**
- **Infrastructure fund DD**
- **Strategic investor negotiations**



**Increase rCB production volumes to increase turnover as quick as possible**

- **Ongoing modification in line 1 = +/- 10%**
- **Line 2 under construction = 6 times todays capacity**



**Install as soon as possible Pyrum Plant 2 in Perl-Besch**

- **Ground preparation done**
- **Long lead items ordered**
- **Construction starting soon**



**Stabilise staff situation in the production**

- **New Staff director**
- **New staff team**
- **New organigram**
- **New Employee participation program**

Thank you for your attention  
Have a great day

