



Enhancing Port Sustainability via Improved Operational Efficiency. Tyre point of view.

Speaker:

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INTRODUCTION



2006

Magna Tyres founded in 2006 as vertical spin-off of a leading compound manufacturer.



Magna compounds produced in mixing facilities in the USA & The Netherlands.

60

Specialized in rubber compounds for OTR & Industrial tyres for 60 years.



Joint venture production facilities in Asia.



INTRODUCTION



Europe

Magna Tyres Headquarters
Magna Tyres Germany
Magna Tyres Poland
Magna Tyres Czech
Industra Ltd.



North America

Magna Tyres Canada
Magna Tyres USA



South America

Magna Tyres Chile



Africa

Magna Tyres South Africa
Tirepoint



Middle East

Magna Tyres Middle East & Africa



Asia & Ocea

Magna Tyres Korea
Magna Tyres Asia
Magna Tyres Technical Service
Magna Tyres Singapore
Magna Tyres India
Fennell Tyres International





INTRODUCTION

2006

- Where it all started
- 800 m²



2020

- New headquarters
- Main warehouse
- 58.000 m²



2022

- Acquisition of Industra
- 📍 Szczecin, Poland



2015

- New headquarters
- 28.000 m²



2021

- Acquisition of Fennell Tyres
- 📍 Perth, Australia



2023

- Acquisition of Tirepoint
- 📍 Johannesburg, South Africa





INTRODUCTION

VOLVO

LIEBHERR

ROKBAK

SEINEBOGEN

KONECRANES®

 **KALMAR**

 **TEREX®**

 **TERBERG**

 **FUCHS®**
A TEREX BRAND

Goldhofer

HOUCON 

DUTCH LANKA TRAILERS®

buisca
CARGO SOLUTIONS

KAMAG

 **VENIERI** SPA

 **GAUSSIN**
MANUBISTIQUE®

BELL

TLD
LOCAL SUPPORT. TOTAL COMMITMENT

COLMAR

 **MANTSINEN**

**BOAT
LIFT**



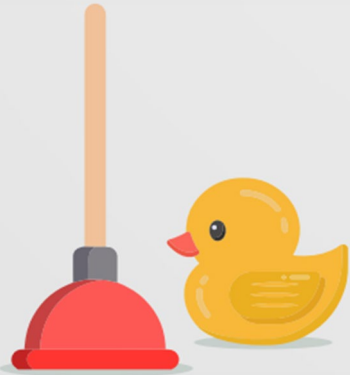
THE TYRE and THE CARBON.

Tyres are typically black due to the addition of carbon black during the manufacturing process. Carbon black is a finely divided form of carbon that is produced by the incomplete combustion of heavy petroleum products. It is added to the rubber compound used in tyre manufacturing as a reinforcing filler, which improves the durability and strength of the tyre



7%

Inks, paints,
plastics etc.



20%

No-tyre
rubber



73%

Tyres

What is Carbon Black?



Carbon black is produced in a quantity of **15 million metric tons** per year and **93%** of the material is being used in **rubber applications**.

73% of those rubber applications are de construction **of tyres**.



THE CARBON.

Today, carbon black is still an essential ingredient in the manufacturing of tyres, and it is used in the vast majority of tyres produced worldwide. It has become an integral part of the tyre industry and is unlikely to be replaced anytime soon, given **its effectiveness and cost-efficiency**.



Strength



Abrasion Resistance



Durability



Reduces the risk
of blowouts



THE TYRE and THE CHEMICALS.

SULFUR

CHEMICAL
PROMOTERS

ACCELERATORS

ZINC OXIDE (ZnO)

ANTIOXIDANTS

STEARIC OXIDE

SILICA

RESINS

PLASTISIZERS

CURING AGENT

BINDERS

Tyre manufacturing involves the use of various chemicals to create the rubber compounds and to facilitate the vulcanization process, which gives rubber its desired properties. The specific chemicals used can vary depending on the tyre type and manufacturer, but here are some common chemicals used in tire production.

It is about same volume as Carbon black which means about total **15 million metric tons.**

20%

Natural
rubber

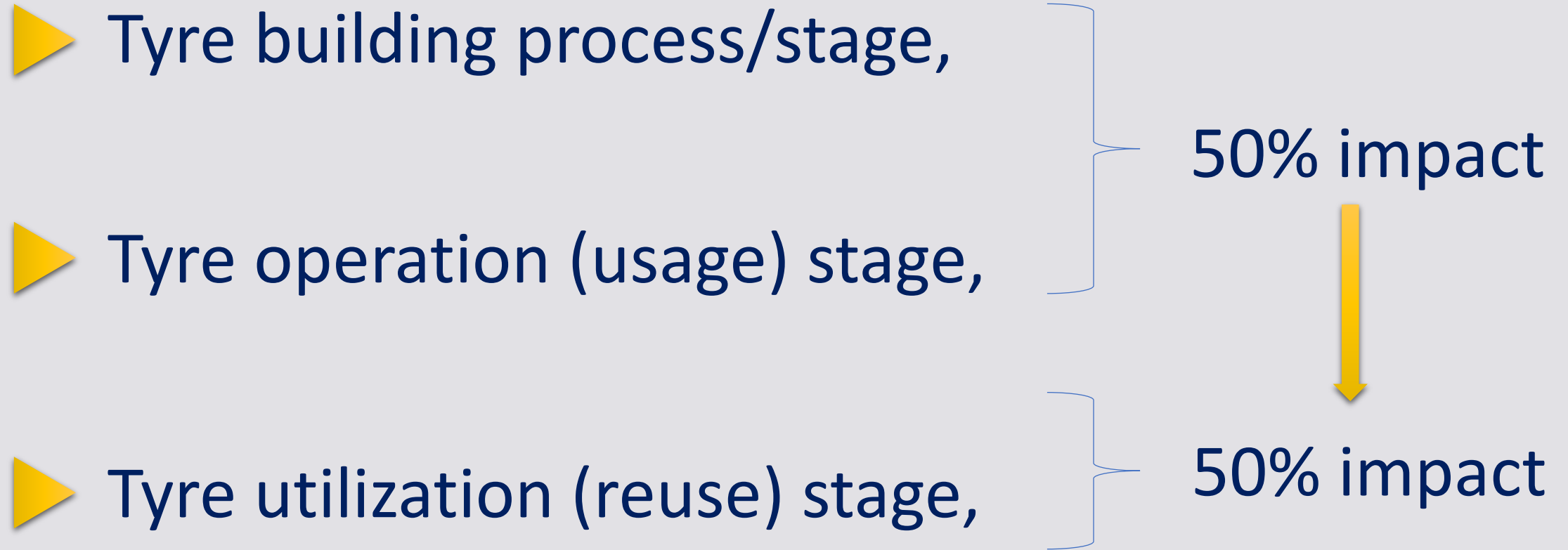
80%

Non-natural
elements



TYRE-ENVIRONMENT INTERACTION

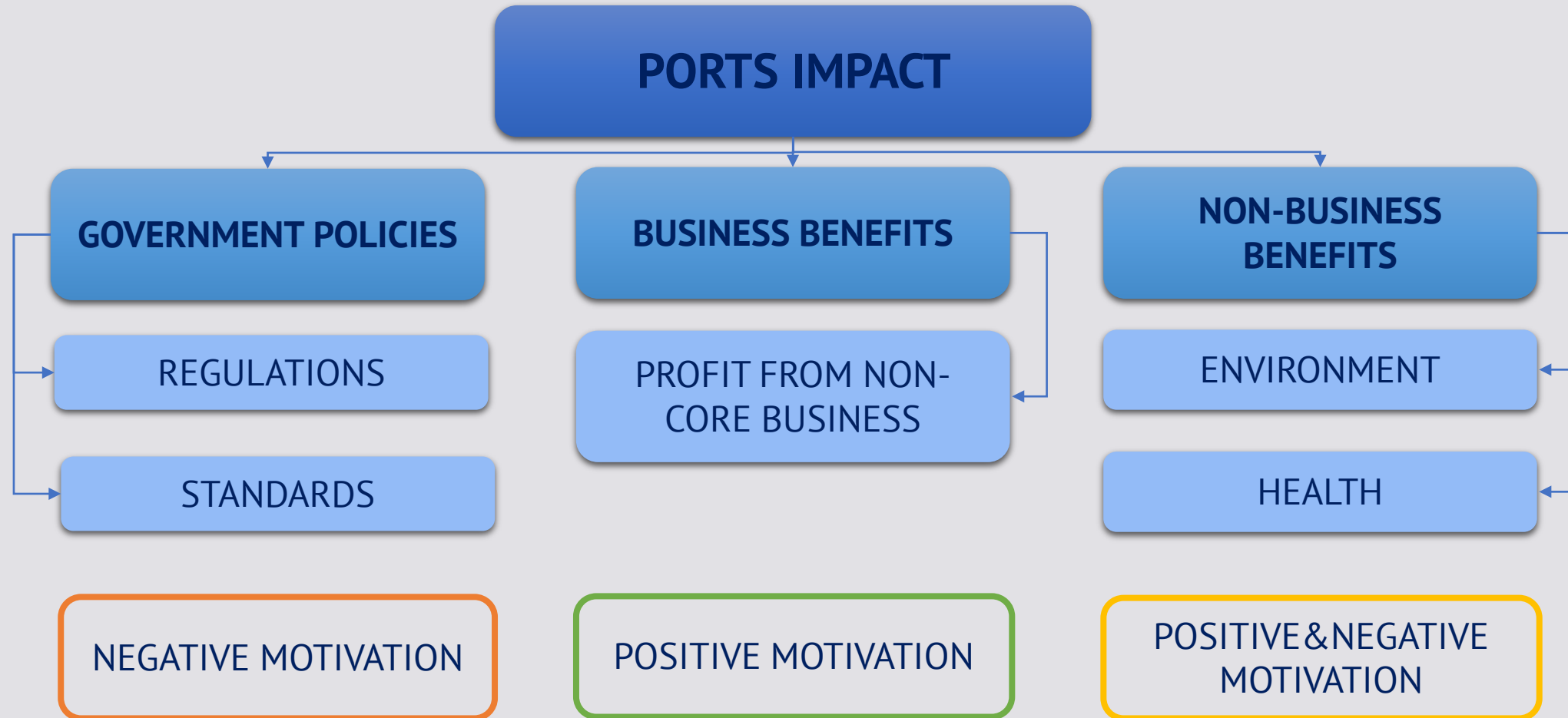
How do you think tyre interacts with environment?





TYRE-ENVIRONMENT INTERACTION

▶ Tyre utilization (reuse) stage





TYRE-ENVIRONMENT INTERACTION

▶ Tyre utilization (reuse) stage

PORTS IMPACT

BUSINESS BENEFITS

PROFIT FROM NON-CORE BUSINESS

POSITIVE MOTIVATION

- Rubber can be used in refurbishing, e.g. re-treading an old, used tyre.

- Rubber can be incinerated to produce energy for use in manufacturing.

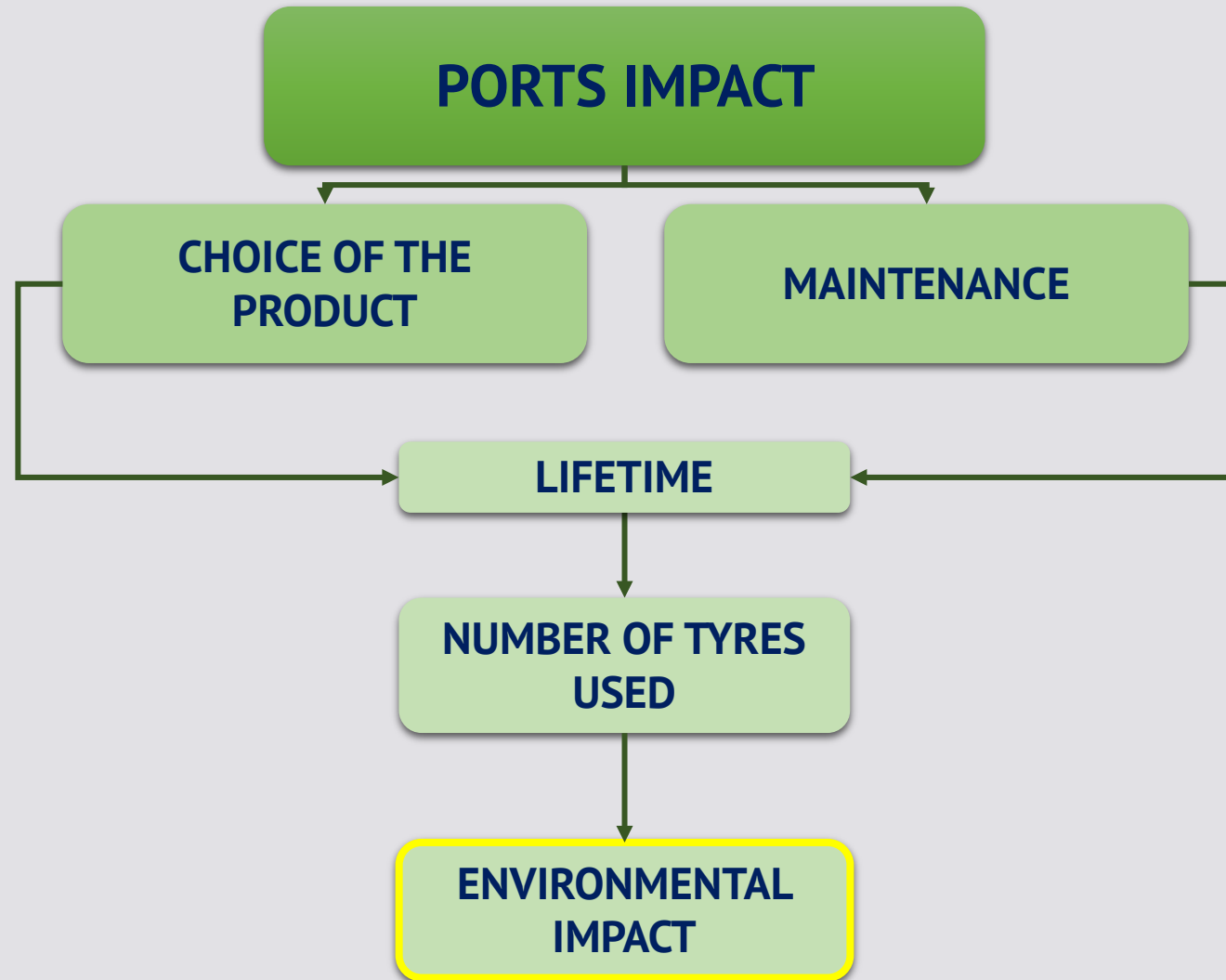
- Rubber can be broken down and reconstituted for use in new products.





TYRE-ENVIRONMENT INTERACTION

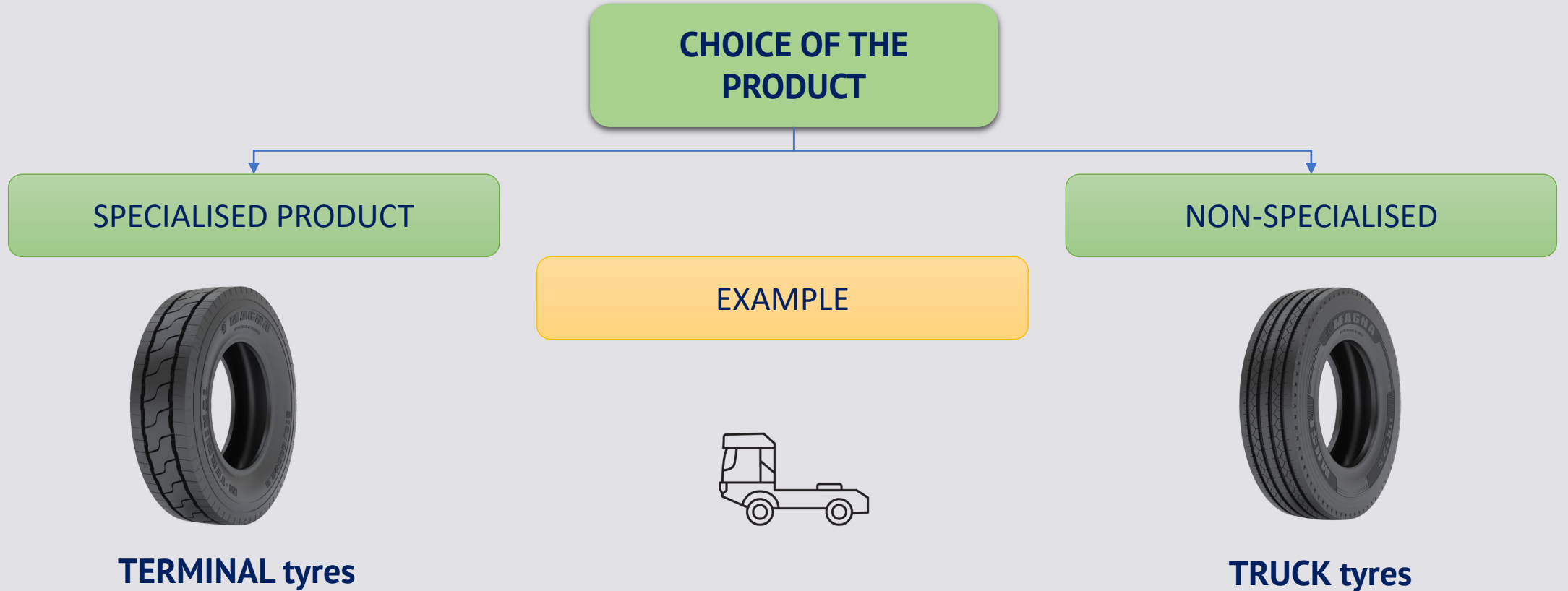
► Tyre operation (usage) stage





TYRE-ENVIRONMENT INTERACTION. Example.

► Tyre operation (usage) stage





TYRE-ENVIRONMENT INTERACTION. Example.

▶ Tyre operation (usage) stage



TRUCK tyres

Made for TRUCKS.

- ➡ Speed Index/Speed : 130 km/h
- ➡ Loading capacity : 3,150 kg



TERMINAL tyres

Made for TERMINAL TRACTORS.

- ➡ Speed Index/Speed : 40 km/h
- ➡ Loading capacity : 5,600 kg



TYRE-ENVIRONMENT INTERACTION. Example.

▶ Tyre operation (usage) stage

Use of TRUCK tyres



- lifetime of a tyre is about **3-6 months** depending on application;
- carbon black volume used to manufacture a truck tyre is **about 30%** from total amount of the ingredients.
- **high rolling resistance** due to specific of the pattern and primary designation for the long-haul application, resulting increase of **fuel consumption** for **+10%- +20%** compared to the terminal tyres.

Use of TERMINAL tyres

- lifetime of a tyre is about **12 months** depending on application;
- carbon black volume used to manufacture a terminal tyre is **about 30%** from total amount of the ingredients.
- much **lower rolling resistance** leading to the **less fuel consumption** for **-10%- 20%**.



TYRE-ENVIRONMENT INTERACTION. Example.

► Tyre operation (usage) stage

Use of TERMINAL tyres



3-4 times

less in tyre
number used



3-4 times

less carbon black,
synthetic rubber and
chemicals in production



- 10% - 20%

less fuel consumption



TYRE-ENVIRONMENT INTERACTION. Example.

► Tyre operation (usage) stage

Use of TERMINAL tyres

Rolling resistance is a significant factor in a vehicle's fuel efficiency. Vehicles equipped with tires that have lower rolling resistance require less energy to move, resulting in improved gas mileage or reduced energy consumption.

Environmental Impact. Reducing rolling resistance in tyres is an important consideration in efforts to improve vehicle fuel efficiency and reduce greenhouse gas emissions. Tyre manufacturers have developed low rolling resistance tyre technologies to contribute to these environmental goals.



- 10% - 20%

less fuel consumption



TYRE-ENVIRONMENT INTERACTION

► Tyre building process/stage,

AS A MANUFACTURER:

**PORTS RIGHT CHOICE
OF THE PRODUCT**

**Less tyres produced with
less emission to the
atmosphere**

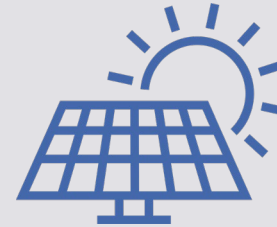
**Less chemicals and
synthetic rubber used
during production stage**



RESPONSIBLE MANUFACTURER

**MAGNA USES SOLAR POWER
WHEREVER IT IS POSSIBLE**

**MAGNA USES NEW LOW-EMISSION
EQUIPMENT DURING
PRODUCTION STAGE**



**RESPONSIBLE MANUFACTURING ACCESSED THROUGH
RESPONSIBLE TYRE USAGE**



CONCLUSION

Questions that remain opened



Is there enough motivation to make a move towards lowering Environmental impact through tyre usage process?



Are the end-users ready to pay for the positive Environmental impact?



THANK YOU!