



Sustainability aspects in the use of processing media for forming or cutting

– How to reduce environmental impact and health hazard in production processes

Stefan Joksch

ILMA's 6th International Metal Working Fluids Conference
January 8-10, Atlanta



Oemeta chemische Werke GmbH

- Founded 1916
- Family Owned
- Market Leader for Water-Miscible MWF in Germany
- Production Facilities in Germany (HQ), China, US, and Turkey
- 250 Employees
- 65 Mio € Turnover (consolidated)
- Trend Setter for MWF Based on Renewables



SCOPE

1. The 17 Sustainable Development Goals
2. Legislation, evaluation systems, standards, and benchmarks for sustainability
3. Materiality vs. MWF
4. Sustainable materials, processes and processing media
5. Examples of sustainability MWF application in manufacturing
4. Four theses

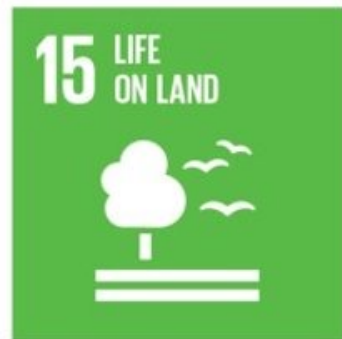
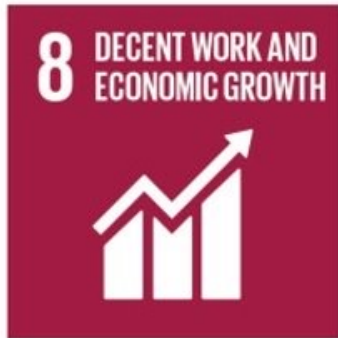


The 17 SDGs



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Source: Bosch Sustainability Strategy

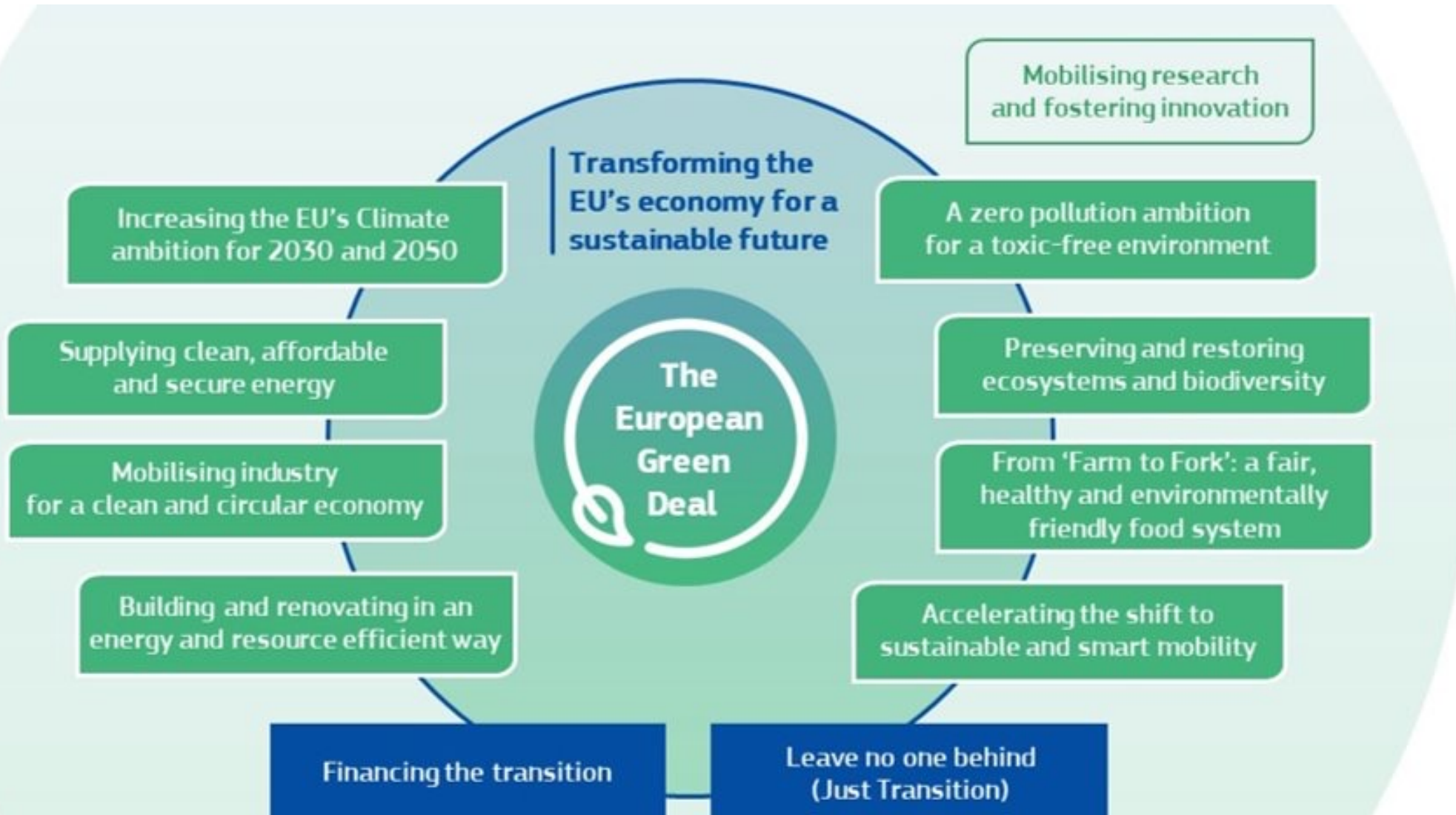
LEGISLATION, EVALUATION SYSTEMS, STANDARDS, AND BENCHMARKS FOR SUSTAINABILITY

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THE EU GREEN DEAL



EU Sustainability Regulation

Corporate Sustainability Reporting Directive

Ecodesign for Sustainable Products Regulation



PRODUCT CARBON FOOTPRINT

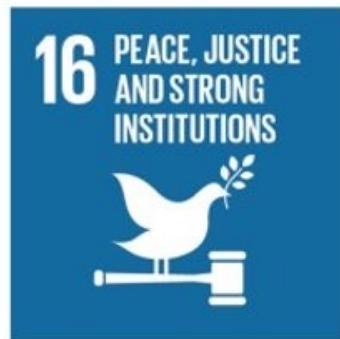
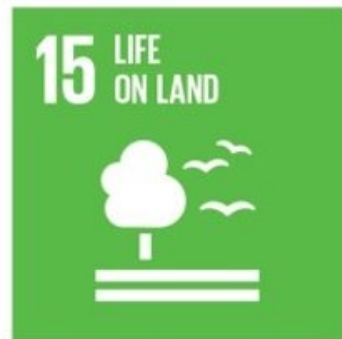
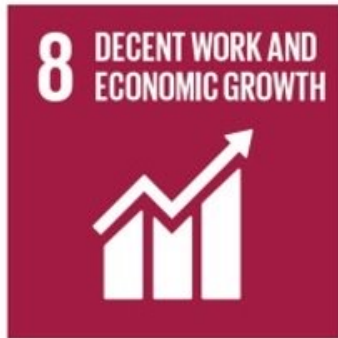
ISO 14067 -	Greenhouse gases - Carbon footprint of products – Requirements and guidelines for quantification
GHG Protocol	Product Life Cycle Accounting Reporting Standard
API Technical Report 1533:	Lubricants Life Cycle Assessment and Carbon Footprinting - Methodology and Best Practice
UEIL PCF Methodology -	Guideline for Lubricant PCF



Materiality MWF



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RELEVANT SDGs



SUSTAINABLE MATERIALS, PROCESSES AND PROCESSING MEDIA

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CONSERVING RESSOURCES, ORIGIN APPROACH

- Native Renewable Oils
- Recycleed Oils (Re-Raffinates)
- Biobased Materials



PROCESS APPROACH

- Resource-saving, energy-optimised process design
- Avoidance and reduction of the consumption of processing materials
- In-process recycling, circular processes



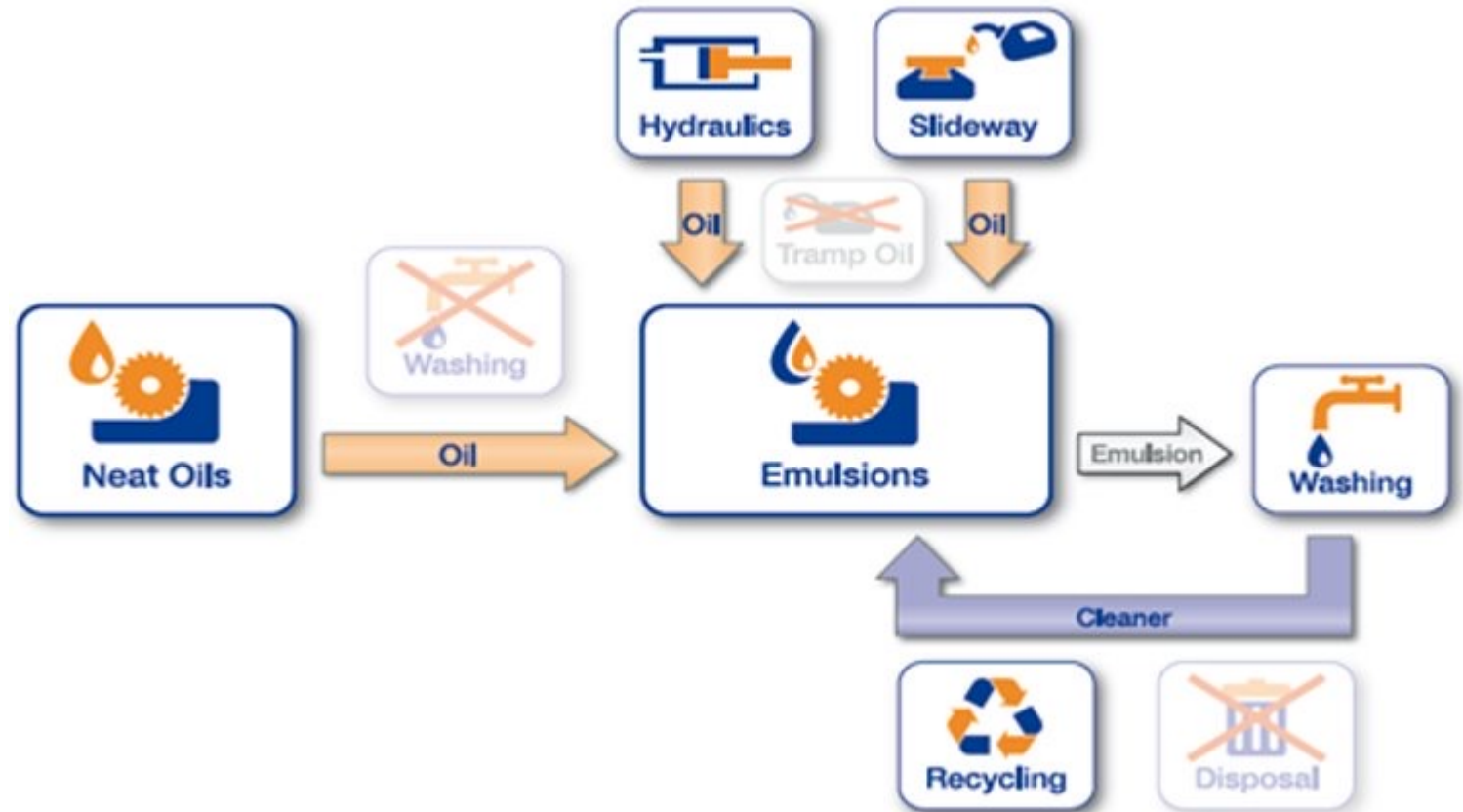
PRODUCT APPROACH – EXAMPLE: ESTER-BASED 2-COMPONENT MULTIFUNCTIONAL OIL

Renewable raw materials

Multiple application, 1 for all

Cleaner recycling

Waste reduction



EXAMPLES OF SUSTAINABILITY PROJECTS IN MANUFACTURING

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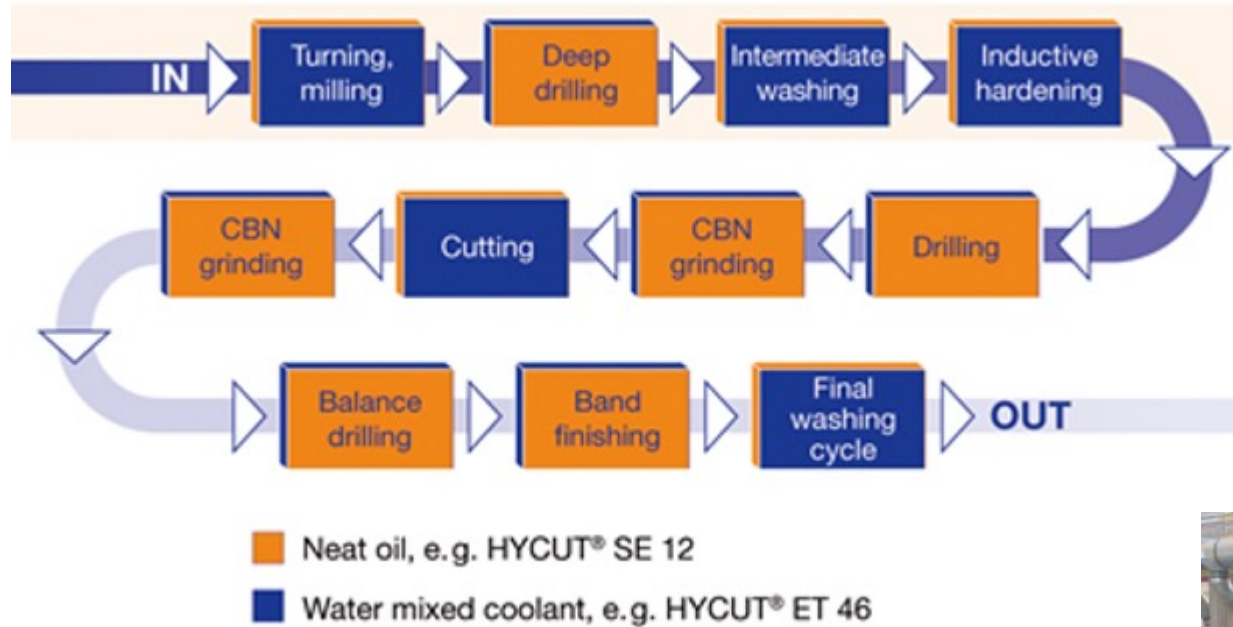
RE-RAFFINATES AS MACHINING OILS IN GEAR PRODUCTION

Step 1 -> Conversion of all gear component machining processes to re-rafinate

Step 2 -> Recovery of oil and cleaning liquid from cleaning processes



THE WASTE-FREE CRANKSHAFT PRODUCTION LINE



FOUR THESES

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FOUR THESES ON THE TOPIC OF SUSTAINABILITY IN MANUFACTURING

- The megatrend of the next decades
- Will become a decisive competitive factor in the coming years
- The greatest sustainability potentials in the use of cooling lubricants arise from internal recycling and the efficiency-optimized use of materials and energy
- Challenge: standardization vs. individualized solutions for the user of processing materials vs. valid evaluation of successes





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**THANKS FOR YOUR
ATTENTION
- QUESTIONS?**

joksch@oemeta.com

www.oemeta.com