

Remanufacturing in the context of today's focus on cycle economy and urban mining

Peter Bartel

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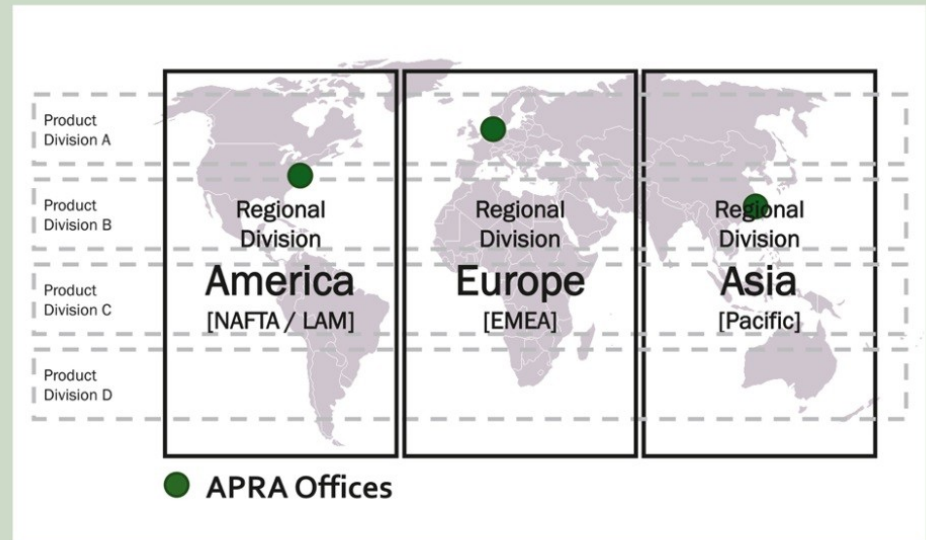
Automotive Parts Remanufacturers Association



- products divisions
- regional divisions
- regional board
- regional offices

**We are the only
association that
supports the
Remanufacturing
Industry worldwide.**

APRA Divisions



www.apra.org / www.apra-europe.org

We Represent & Support



- Remanufacturers
- Component Manufacturers
- Car Manufacturers
- Core Dealers
- Wholesalers
- Scientific research institutions
- Consultants & Services

Cooperation



APRA is cooperating and networking with several other associations with in EU



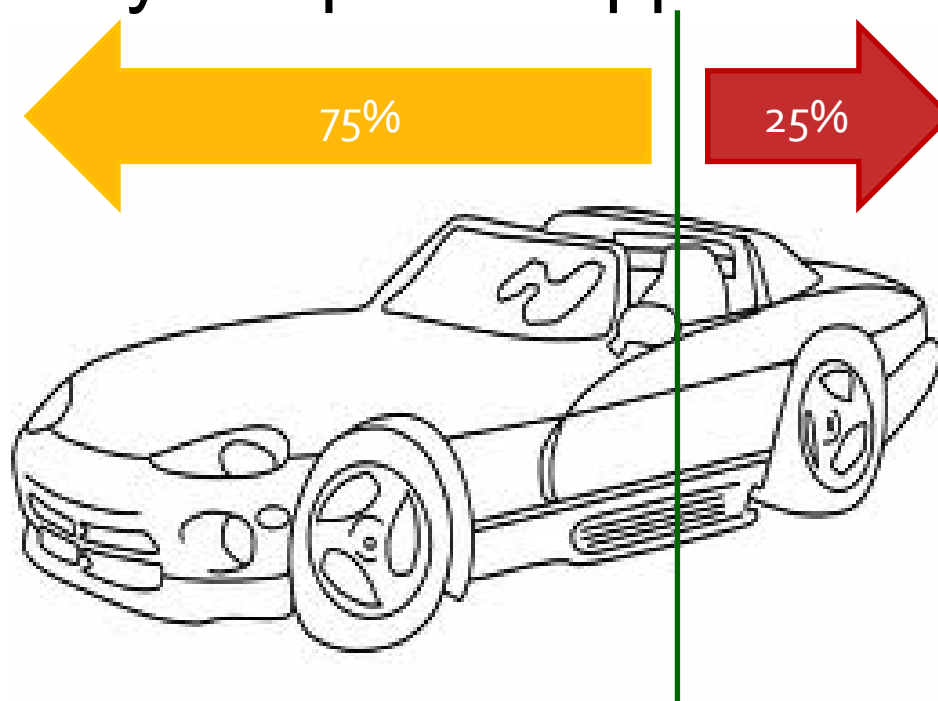
C L E P A
*European Association of
Automotive Suppliers*



Automotive Industry

Situation in EU28 in 2014:

- More than 75% of the value of a vehicle is produced by the parts supplier.



International APRA Members



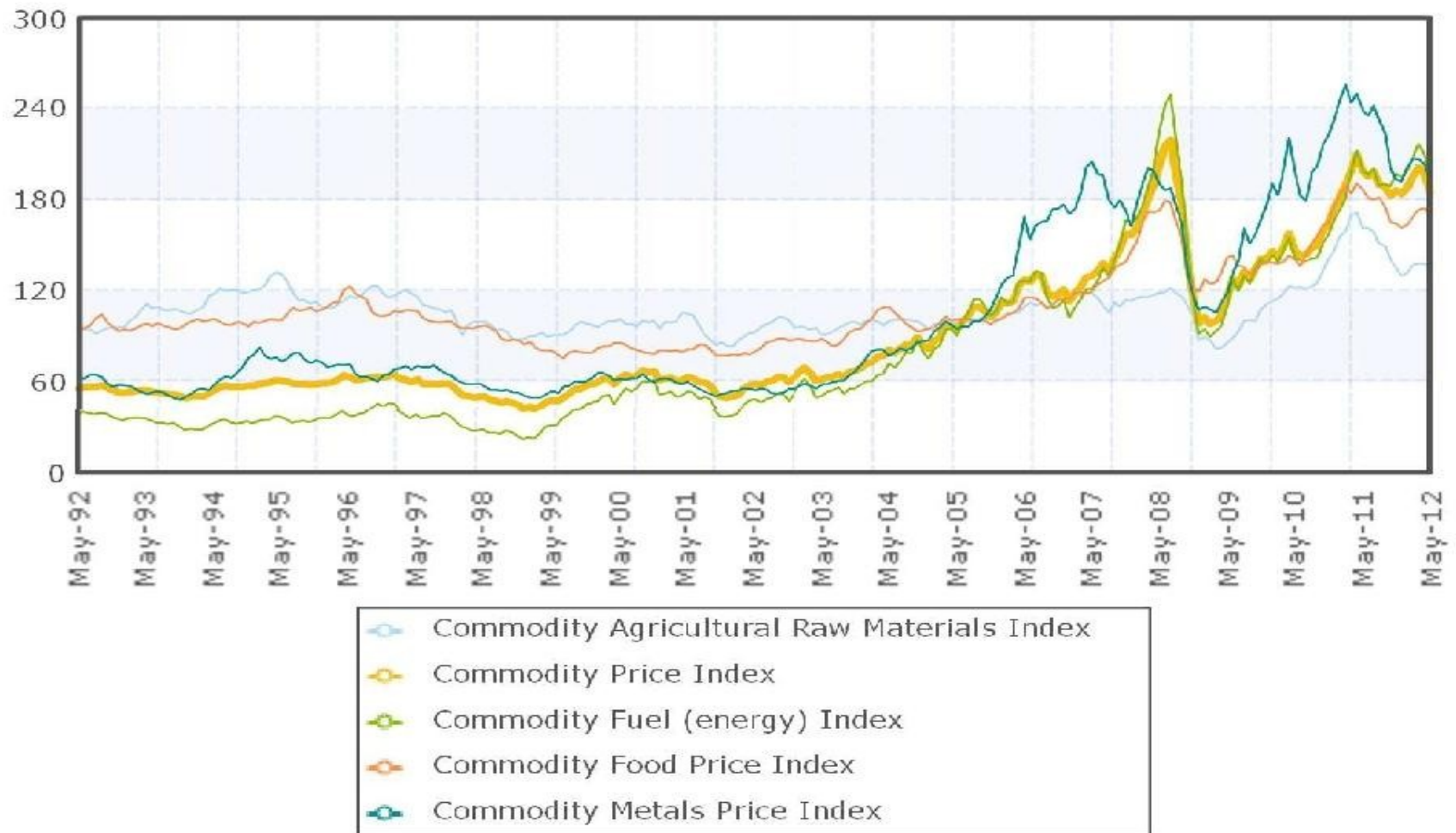
KNORR-BREMSE



Can increasing raw material costs limit the cycle economy in the Automotive Industry?

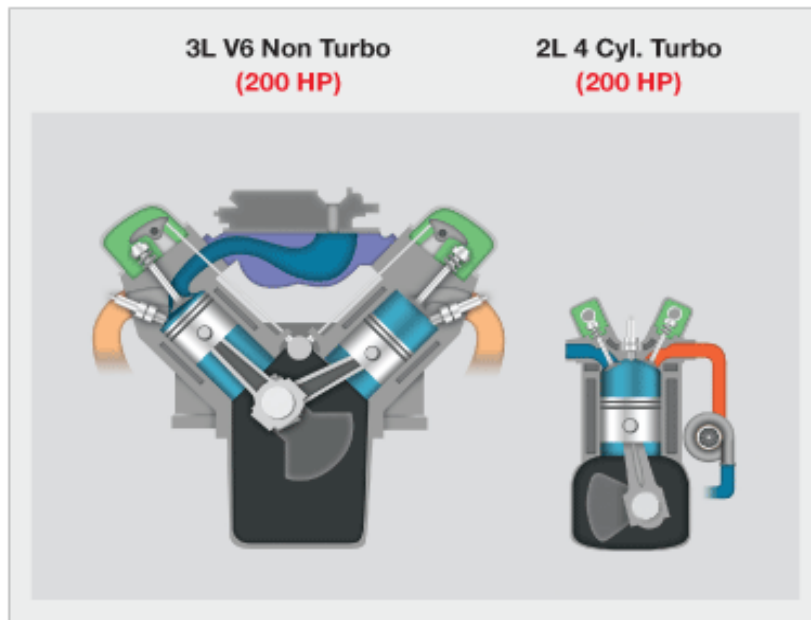
REMANUFACTURING FOR THE AUTOMOTIVE AFTERMARKET

Costs of Raw Materials



Down sizing in the automotive industry

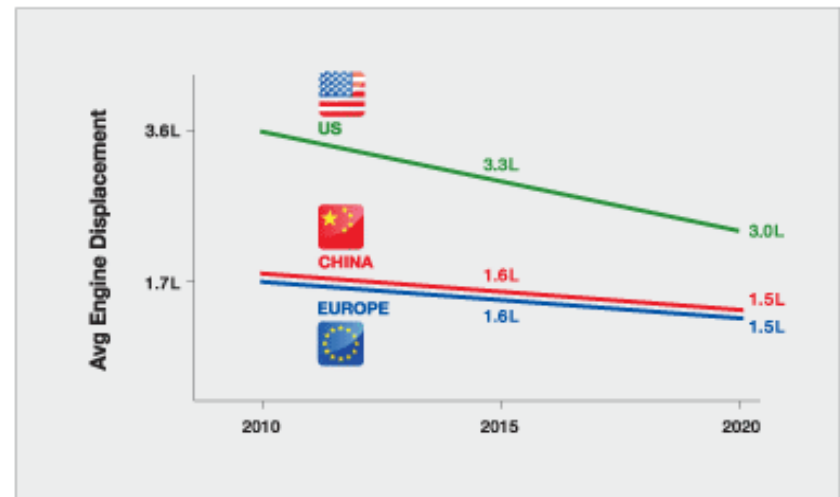
Turbo + Small Engine = Fuel Economy



By harnessing the energy from exhaust gas otherwise wasted, turbocharger helps a smaller engine to perform like a bigger one with better fuel efficiency.

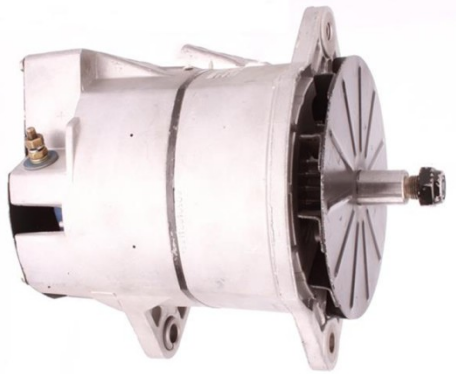
Engine Downsizing Trend

(Source: Global Insight & Honeywell)



Turbo's ability to deliver big engine performance in smaller displacement power blocks will increasingly support an automotive industry downsizing agenda focused on meeting fuel efficiency targets while maintaining impressive driveability.

Automotive parts are getting smaller & more powerful.



1,7 KW – 11,6kg



3,1 KW – 7,9kg

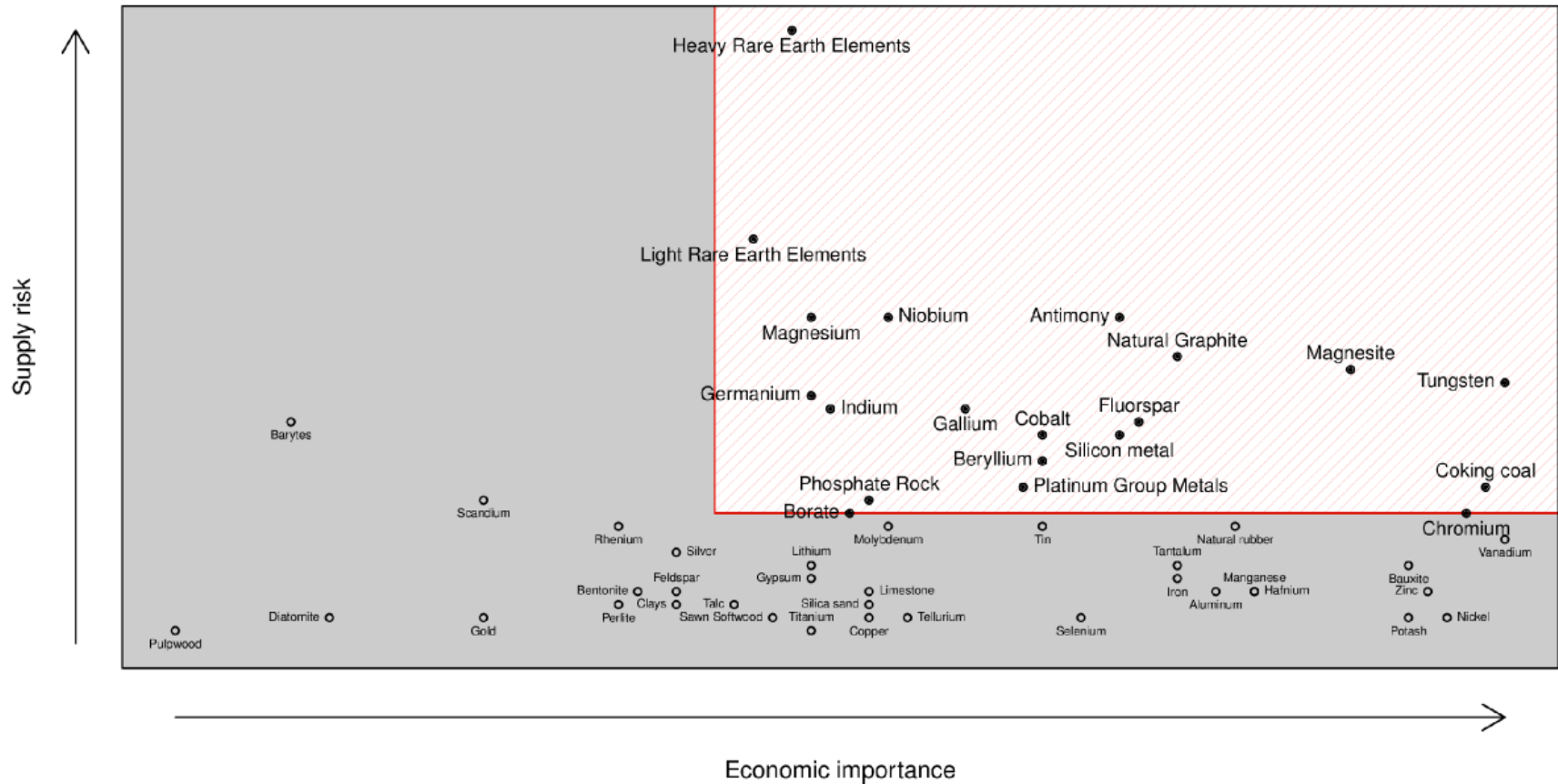


1.1KW – 7 kg

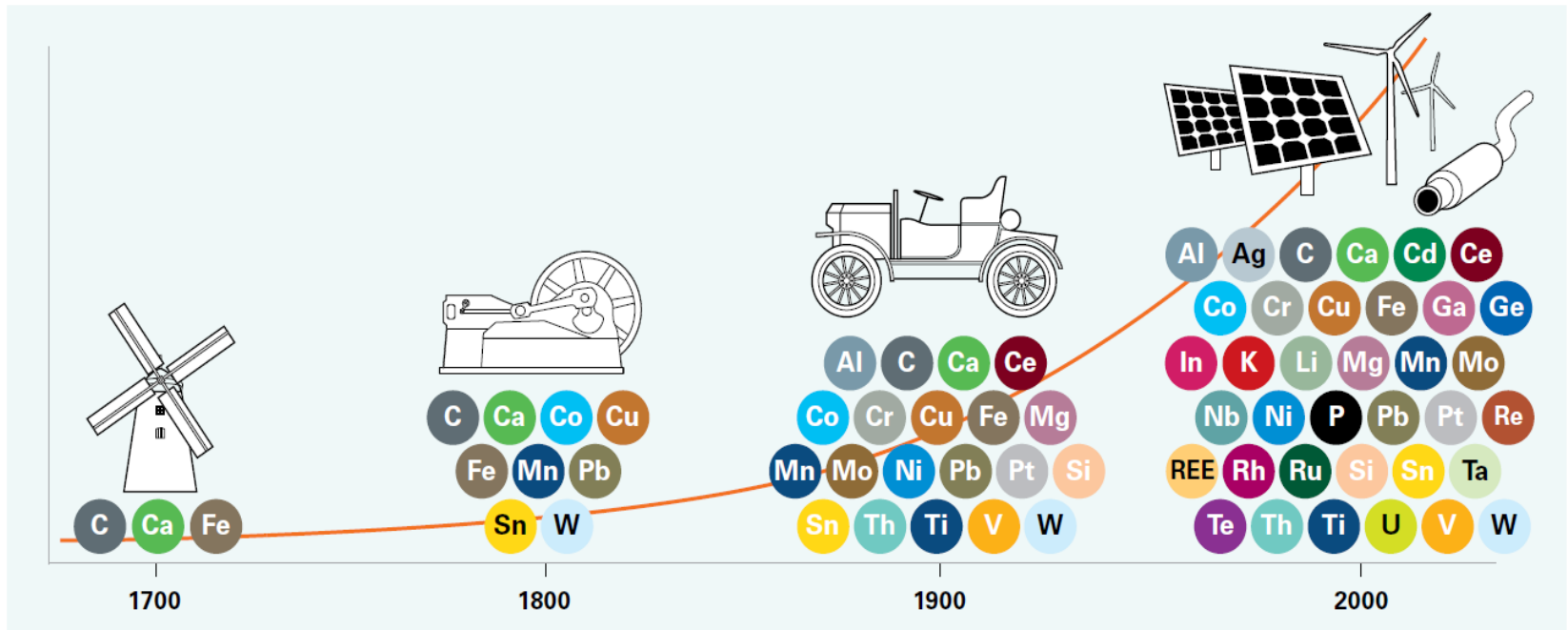


1,4 KW – 3,4 kg

Critical Materials out of the view of the EC



Utilization of rare and expensive raw materials



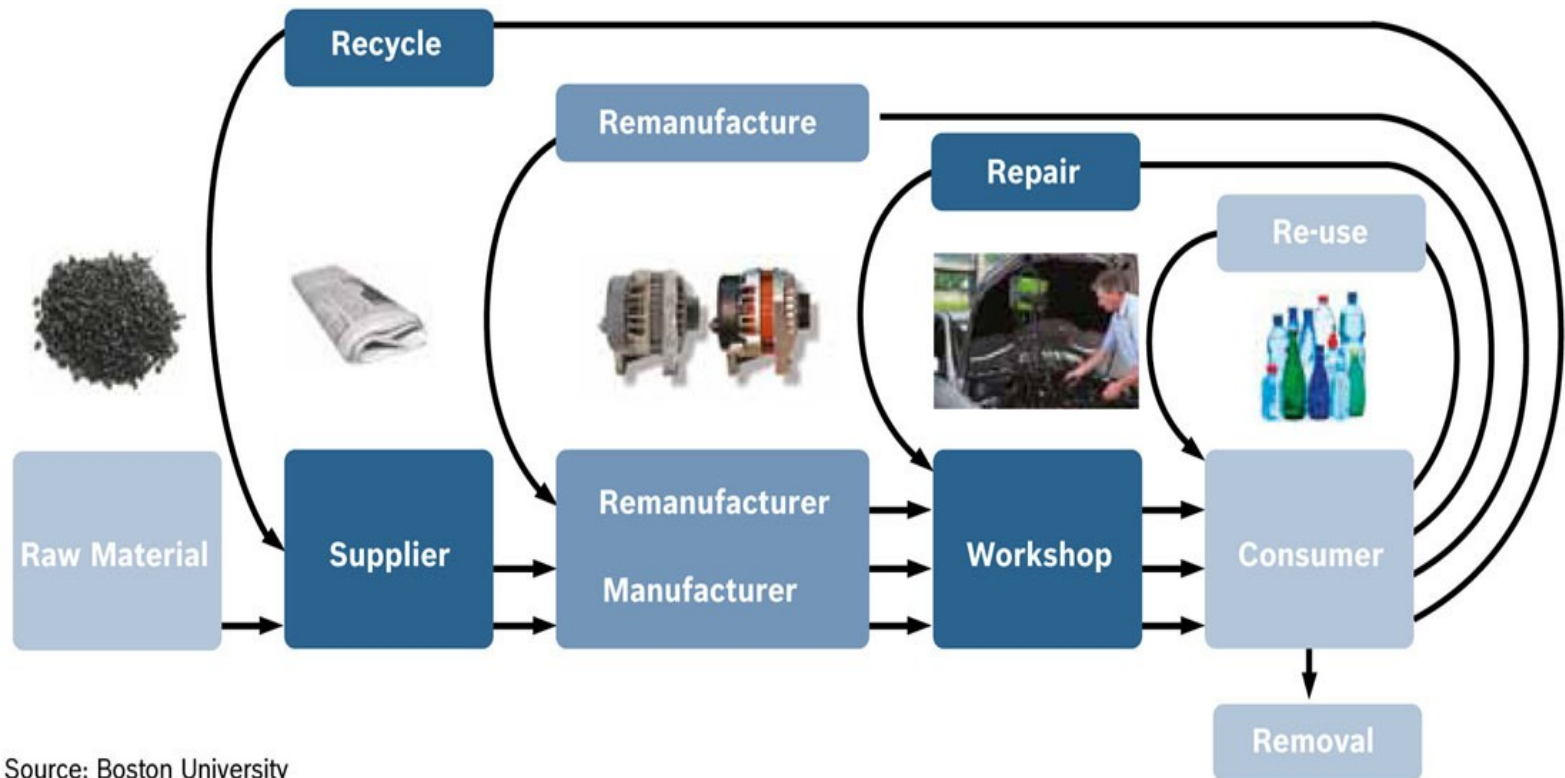
Parts proliferation and availability



- With the age of the car, the need for service parts increases
- Small-scale new production for the after market is expensive
- Remanufacturing down to very few pieces with short delivery time is possible

Remanufacturing

Delimitation Remanufacturing vs. Recycling, Repair, Re-use



Source: Boston University

The footprint of the remanufacturing
Industry.

REMANUFACTURING FOR THE AUTOMOTIVE AFTERMARKET

Definition

Remanufactured Part



- ❑ A remanufactured part fulfills a function which is at least equivalent compared to the original part [1].

It is **restored from an existing part** (CORE[2]), using standardized industrial processes [3] in line with **specific technical specifications** [4].

A remanufactured part is given the same warranty as a new part [5] and it clearly identifies [6] the part as a remanufactured part and states the remanufacturer.

- ❑ **A remanufactured part is different** from a reused, repaired, rebuilt, refurbished, reworked or reconditioned part.

[These categories are not subject to this definition and the process of remanufactured parts.]

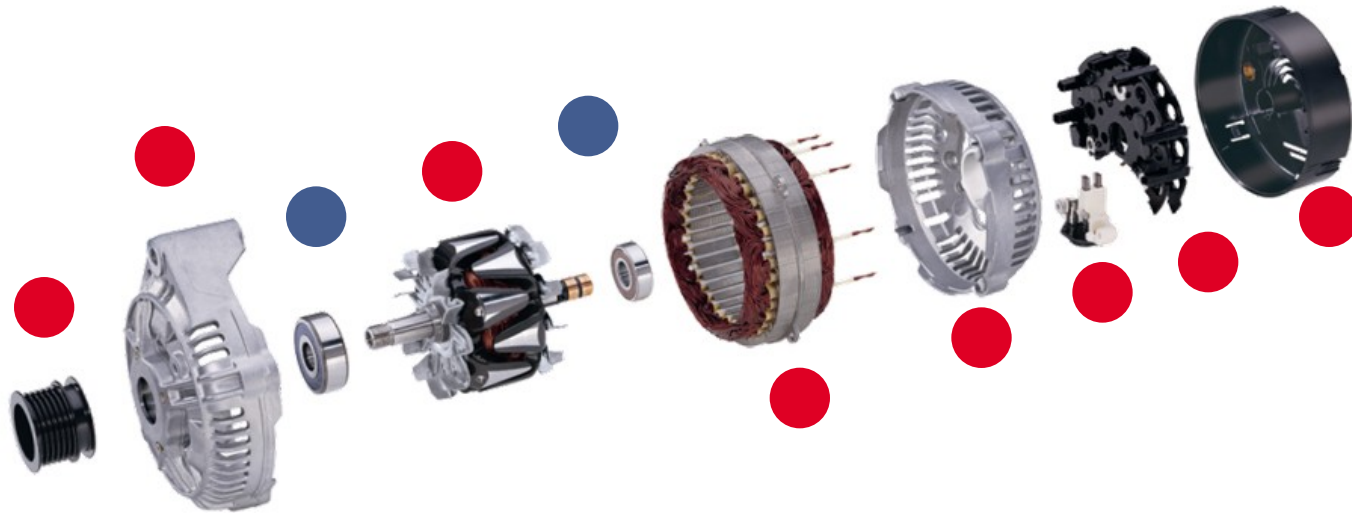
Remanufacturing Products





Ecological Footprint of Remanufacturing.

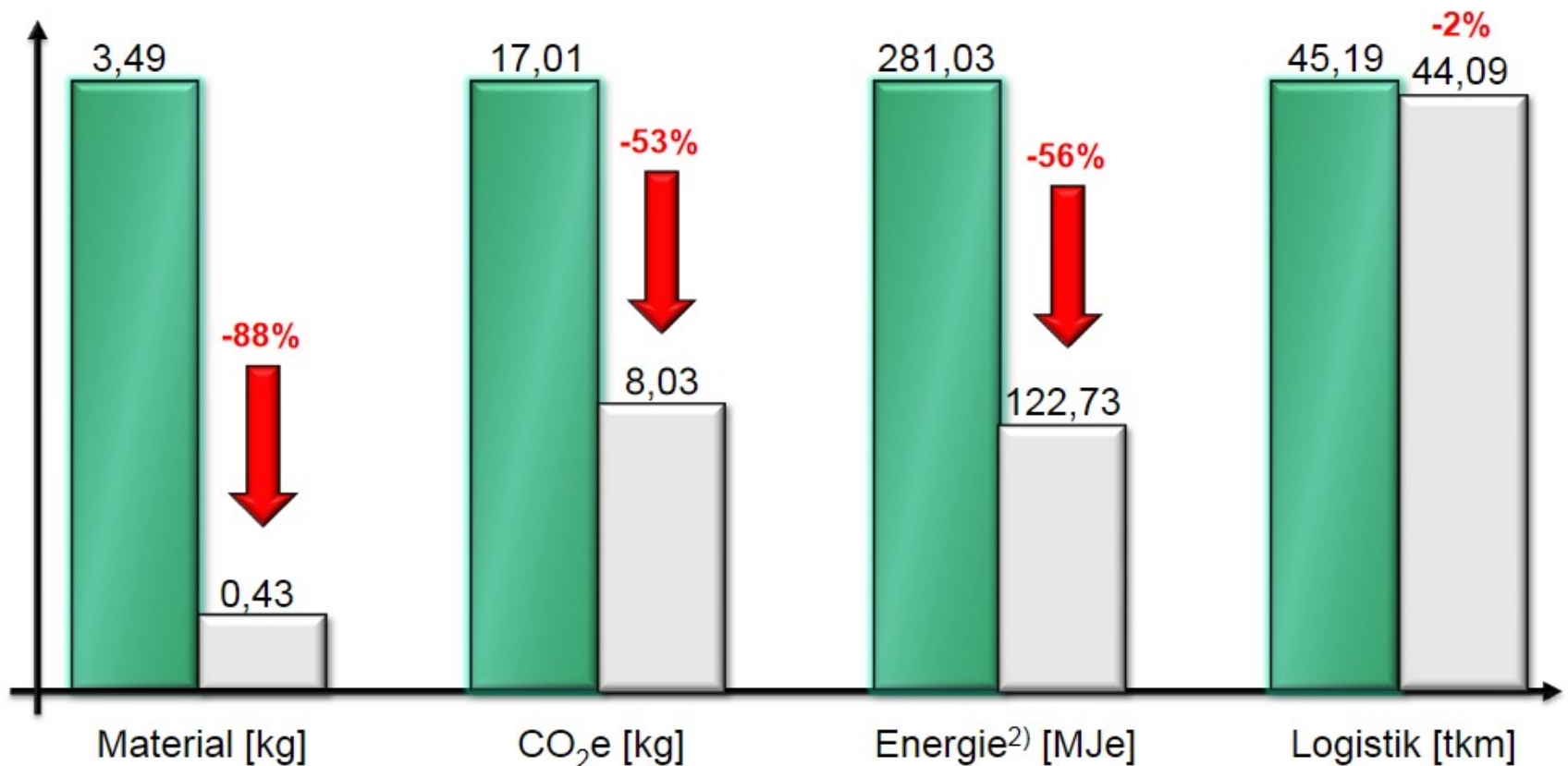
REMANUFACTURING FOR THE AUTOMOTIVE AFTERMARKET

Components reused in Remanufacturing



-
-  Re-used is in line with specification
 -  100% replaced

Ecological benefits of Remanufacturing



1) Alle Werte über Masseverhältnis auf einen kompletten Starter skaliert

2) Wirkabschätzung mit der Methode: Cumulative Energy Demand Version 1.05

 Neuproduktion  Remanufacturing