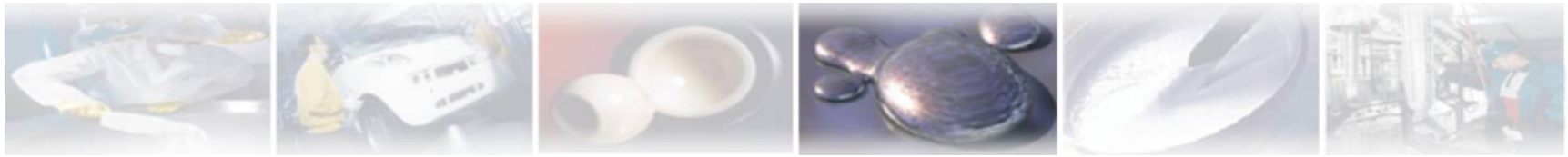
Chemetall

Lithium Recycling Activities from EV Batteries



Dr. Steffen Haber
President Lithium

EGM ON SUSTAINABLE DEVELOPMENT OF LITHIUM RESOURCES IN LATIN AMERICA

Santiago de Chile, 10-11th November 2010

…the Lithium company

Forward Looking Statements

This presentation may contain certain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 concerning the business, operations and financial condition of Rockwood Holdings, Inc. and its subsidiaries (“Rockwood”). Although Rockwood believes the expectations reflected in such forward-looking statements are based upon reasonable assumptions, there can be no assurance that its expectations will be realized. "Forward-looking statements" consist of all non-historical information, including the statements referring to the prospects and future performance of Rockwood. Actual results could differ materially from those projected in Rockwood’s forward-looking statements due to numerous known and unknown risks and uncertainties, including, among other things, the "Risk Factors" described in Rockwood’s 2008 Form 10-K with the Securities and Exchange Commission. Rockwood does not undertake any obligation to publicly update any forward-looking statement to reflect events or circumstances after the date on which any such statement is made or to reflect the occurrence of unanticipated events.

Chemetall is Part of Rockwood (NYSE ROC)

ROCKWOOD HOLDINGS, INC.

Net Sales: $ 2,963
Employees: 9,500

Chemetall

Net Sales: $ 997
Employees: 2,713

Pigments & Additives

Advanced Materials

Surface Treatment

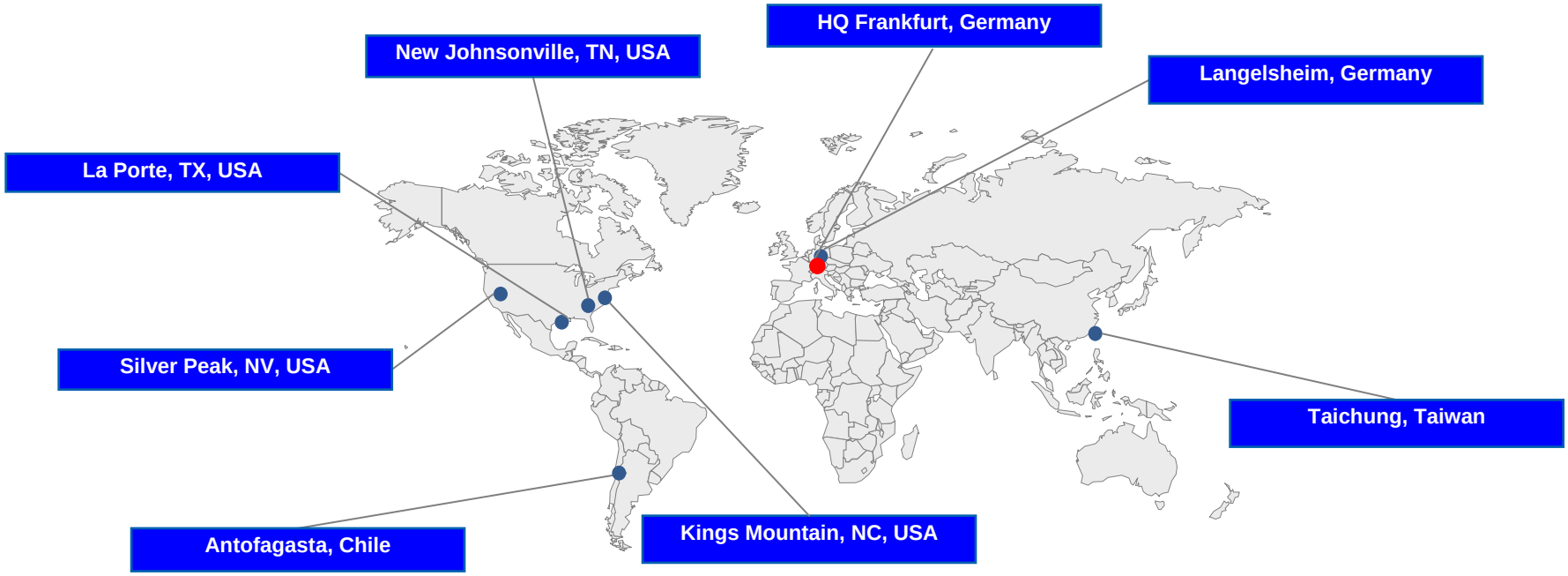
Lithium Division




(USD millions)
fiscal year 2009

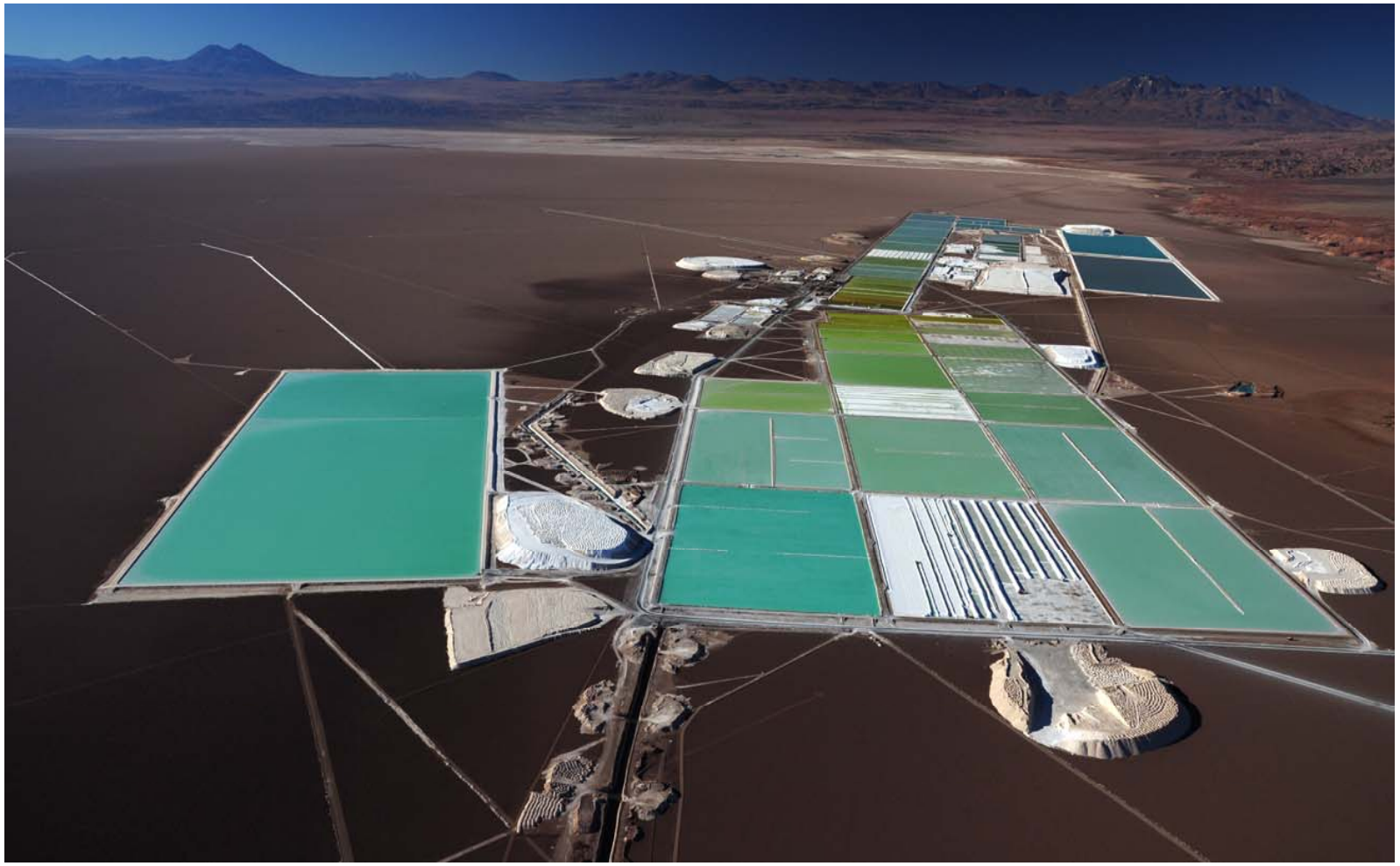
Chemetall Lithium Division – Global Market Position

- More than 50% market share, for Li_2CO_3 approx. 30%
- Very broad portfolio of specialty compounds and salts
- Headquarter Frankfurt, Germany, Production sites worldwide



Chemetall‘s Main Lithium Source

Salar de Atacama (Chile)



Chemetall – Core Competencies

Brine and salt processing

- Solar pond technology
- Salt purification
- Crystallization
- Production of High Purity Li salts

Lithium Metal

- Casting of Lithium metal
- Semi-finished metal product

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Lithium Products Portfolio

Closed cycles of materials

- Recycling of production residues
  - From internal processes
  - From customer's processes

Organometallics

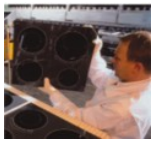
- Large scale production of air and water sensitive materials

The Lithium World

(Main Products and Applications)

Lithium carbonate

Li-Ion-Batteries

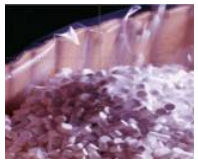


Glass & Ceramics

Cement

Aluminum

Lithium hydroxide



Li-Ion-Batteries

Grease

CO_2 Absorption

Lithium metal

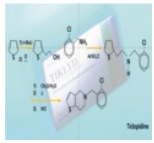
Li Primary Batteries

Pharmaceuticals

Al-Li alloys

Butyl-lithium

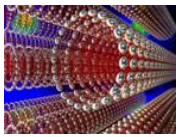
Elastomers



Pharmaceuticals

Agrochemicals

Lithium specialties

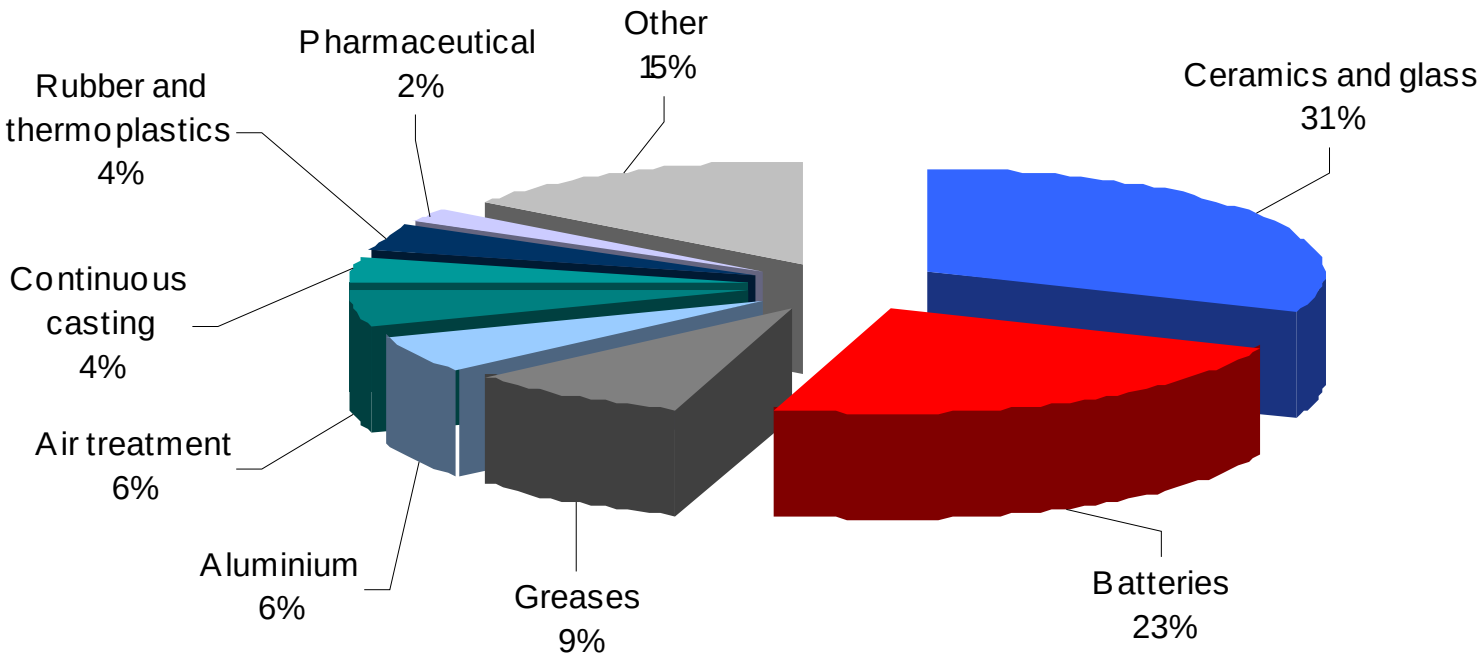


Electronic Materials

Pharmaceuticals

Agrochemicals

Consumption of Lithium by End-use, 2009 (approx. 100.000 mt LCE*)

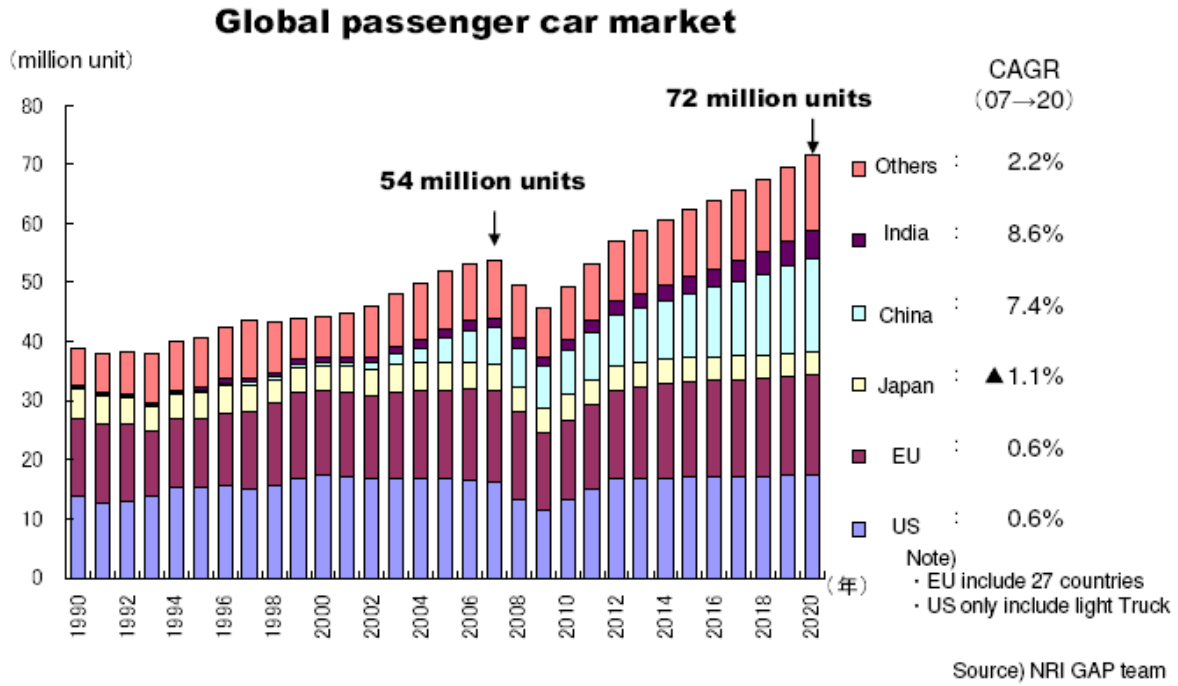


* LCE = Lithium Carbonate Equivalents

Automotive Market Growth

Passenger car market will be 72 million in 2020.

- China and other emerging countries will lead the car market growth.



Lithium Carbonate Equivalent (LCE) Demand

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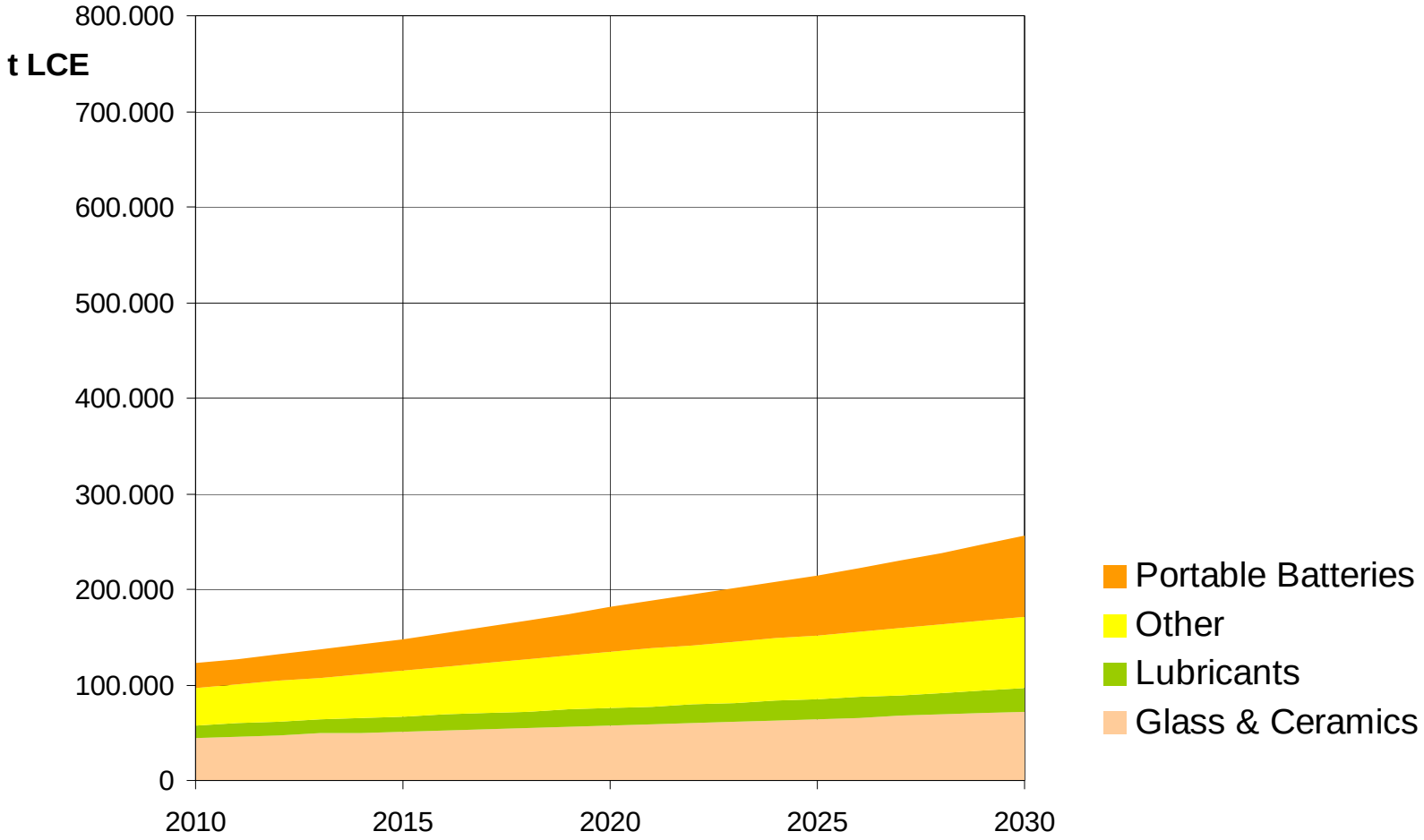
Car Type	All Electric Vehicle (EV)	Plug-in Hybrid (PHEV)	Mild Hybrid (HEV)
Approx. Battery Capacity	25 kWh	16 kWh	1 kWh
Lithium Demand (LCE) (Approximate)	22 kg	15 kg	2 kg
Revenue 5 US$/kg	110 US$	75 US$	10 US$

- Addition of 1 Million all electric cars will add 22.000 tons more LCE demand and create about 110 Mio US$ in revenue
- 10% electrification (7Million cars) would require about 120.000 - 150.000 mt more Lithium equivalents by 2020, which would total in about 750 Mio US$ in revenue

Lithium Forecast - Market Penetration Scenarios

(Basis: Six Different Market Studies)



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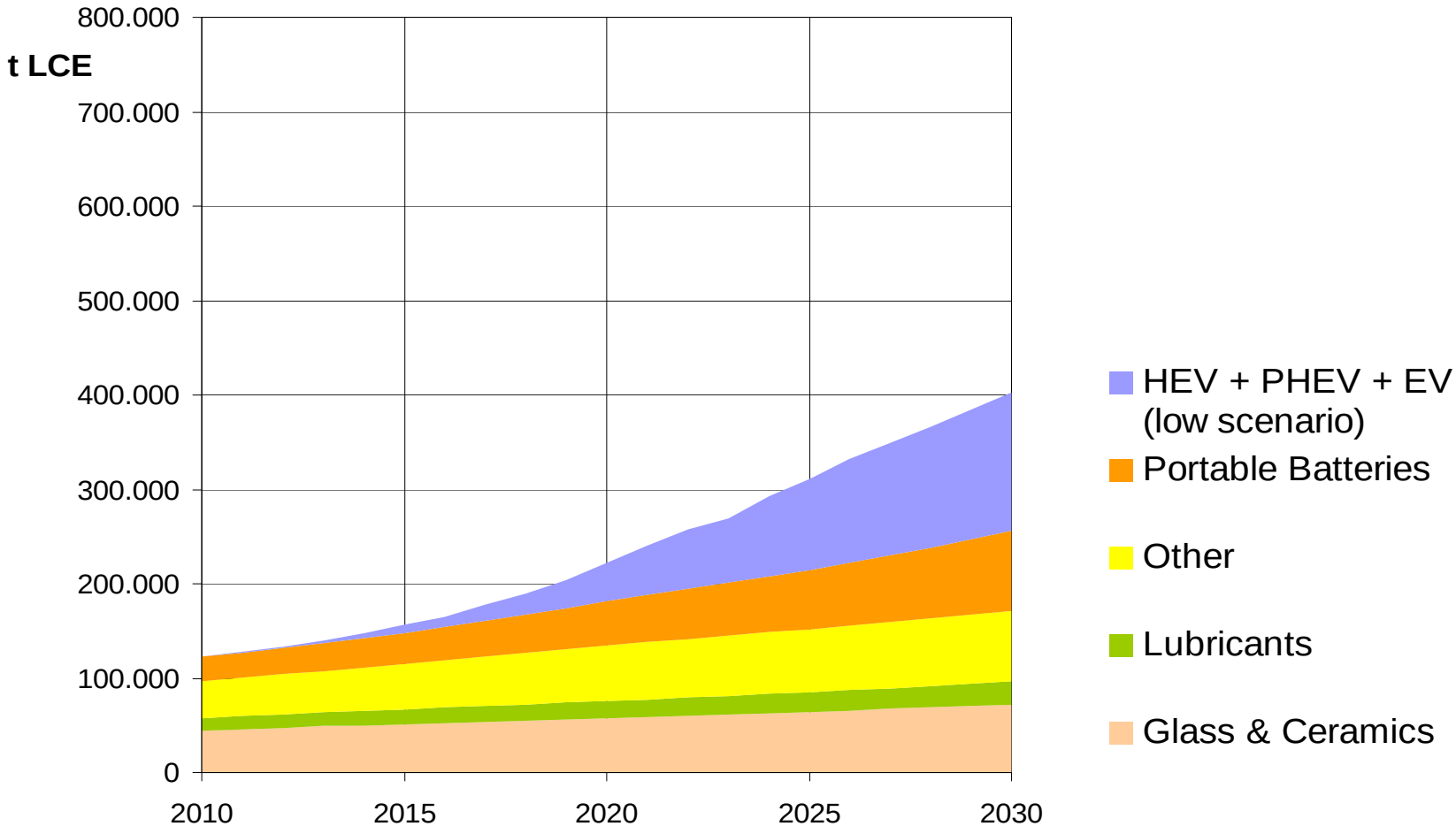

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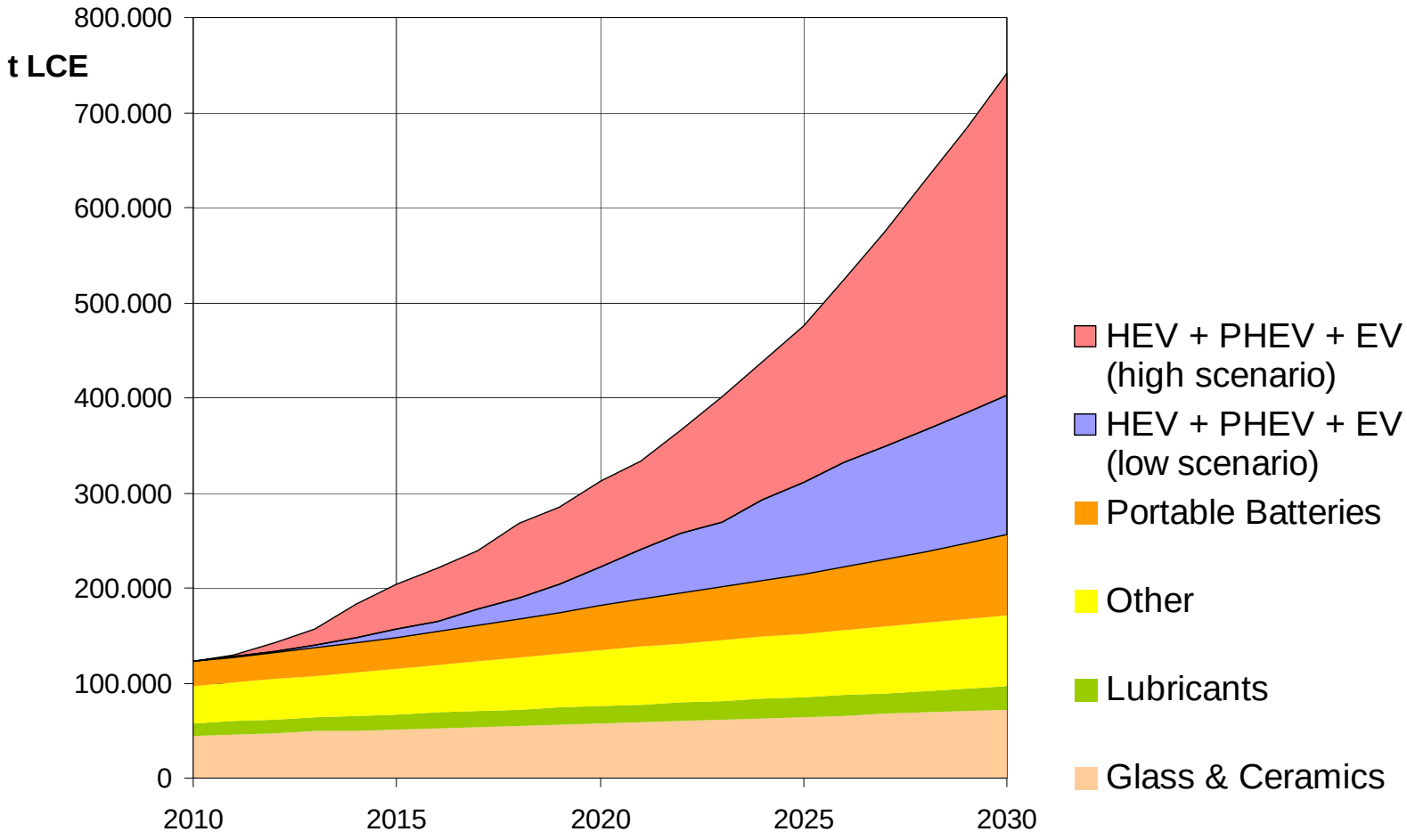
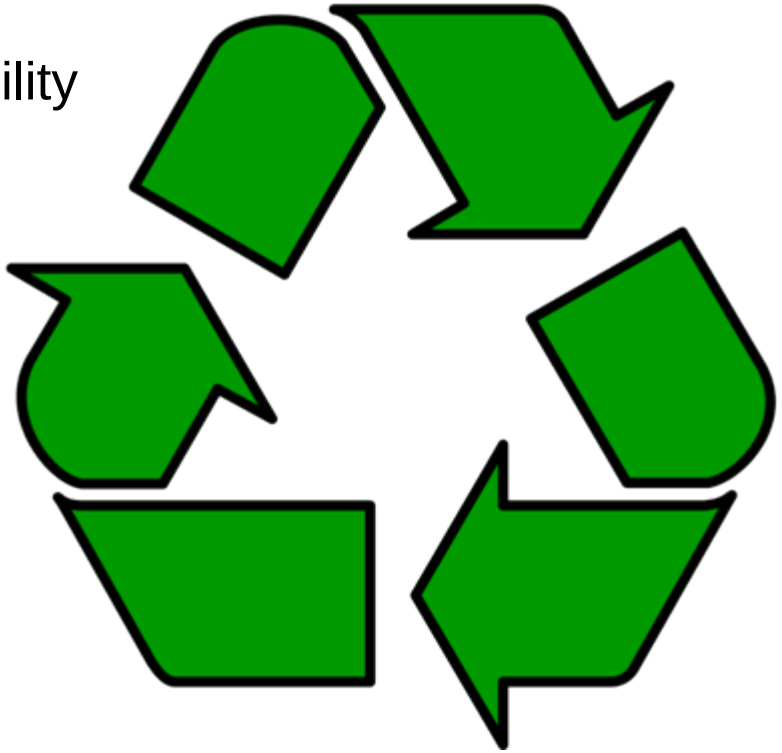


The Importance of Recycling

- Environmental Issues
- Extended Producer Responsibility
- Regulation
- Resources Preservation / Sustainability
- Geostrategical Issues
- Consumer Acceptance / Image



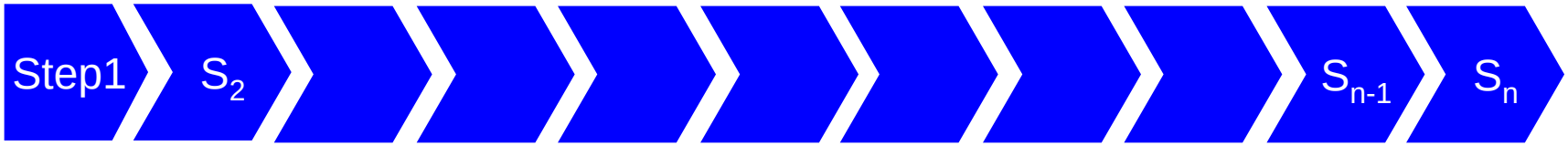
Li Ion Portable Battery Recycling

- Post-consumer collection rate is poor
- No dismantling, separation of individual components & treatment
- In most cases, Pyrometallurgical recycling
- Li remains in slag or flue ash
- Focus on transition metals (Co, Ni)
- Today, downcycling of Lithium materials or disposal

HEV and EV Battery Recycling

- Li in cathode material, used anode material and electrolyte
- Collection near 100% expected, even when stationary use after EOL of vehicle
- No Li losses during dismantling
- Only some losses during separation & treatment
- Hydrometallurgical recycling: very high efficiency on Li
- Pyrometallurgical processes: Li in residues (ash or slag)
- Integrated transition metal recycling

Success Factors for EV Battery Recycling



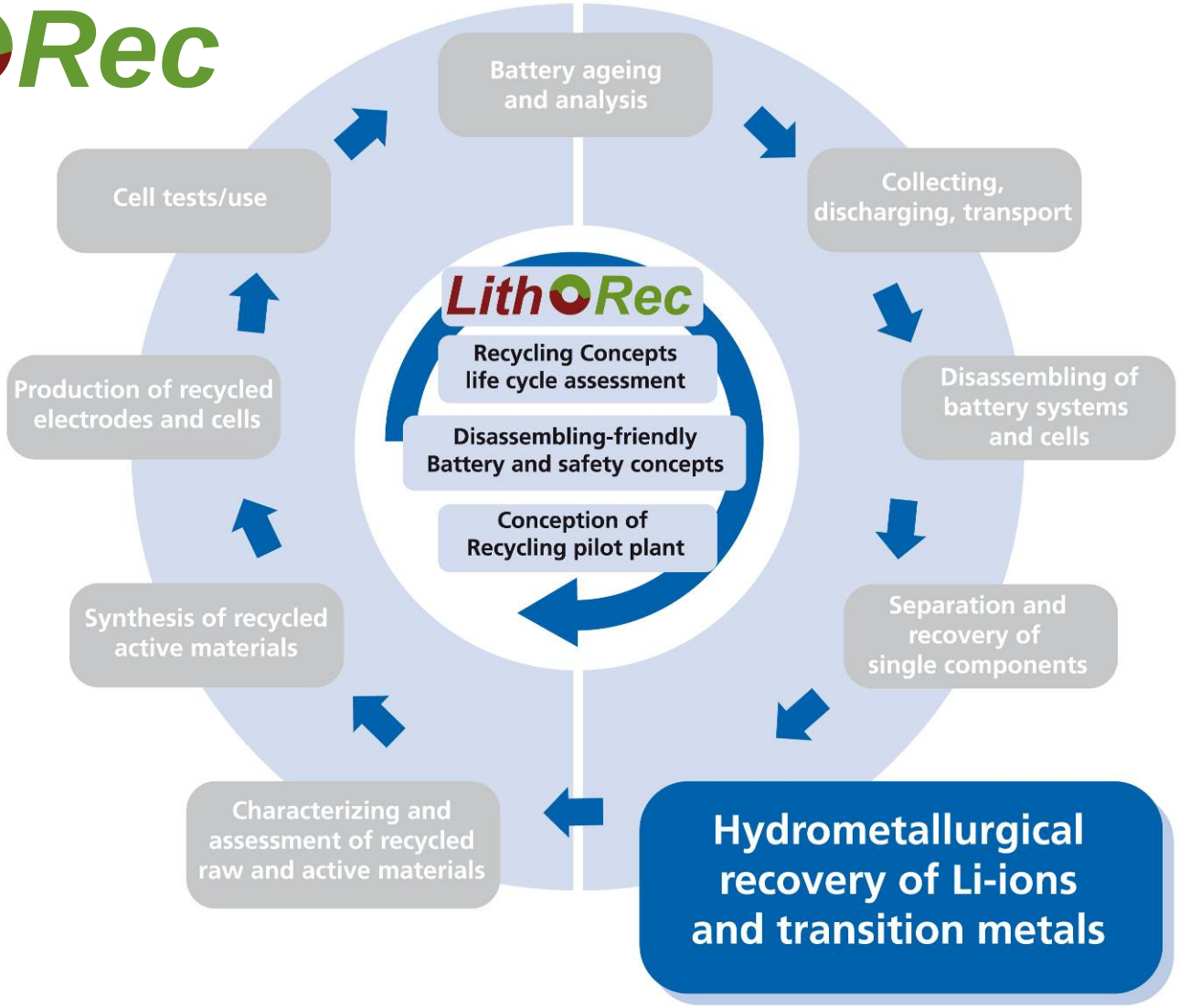
- Recycling is sensitive due to the long process chain
- Process optimization in every single step necessary
- Integration
- Leading companies and scientific institutes
- Support from government and public

Success Factors for EV Battery Recycling

- Responsibility for recycling (legal framework)
- Configuration and control of the entire system
- Very dependent on positive image
- Good communication and relationships
- Setting of recycling standards
- Certification of recycling processes and companies
- Battery design and quality guidelines

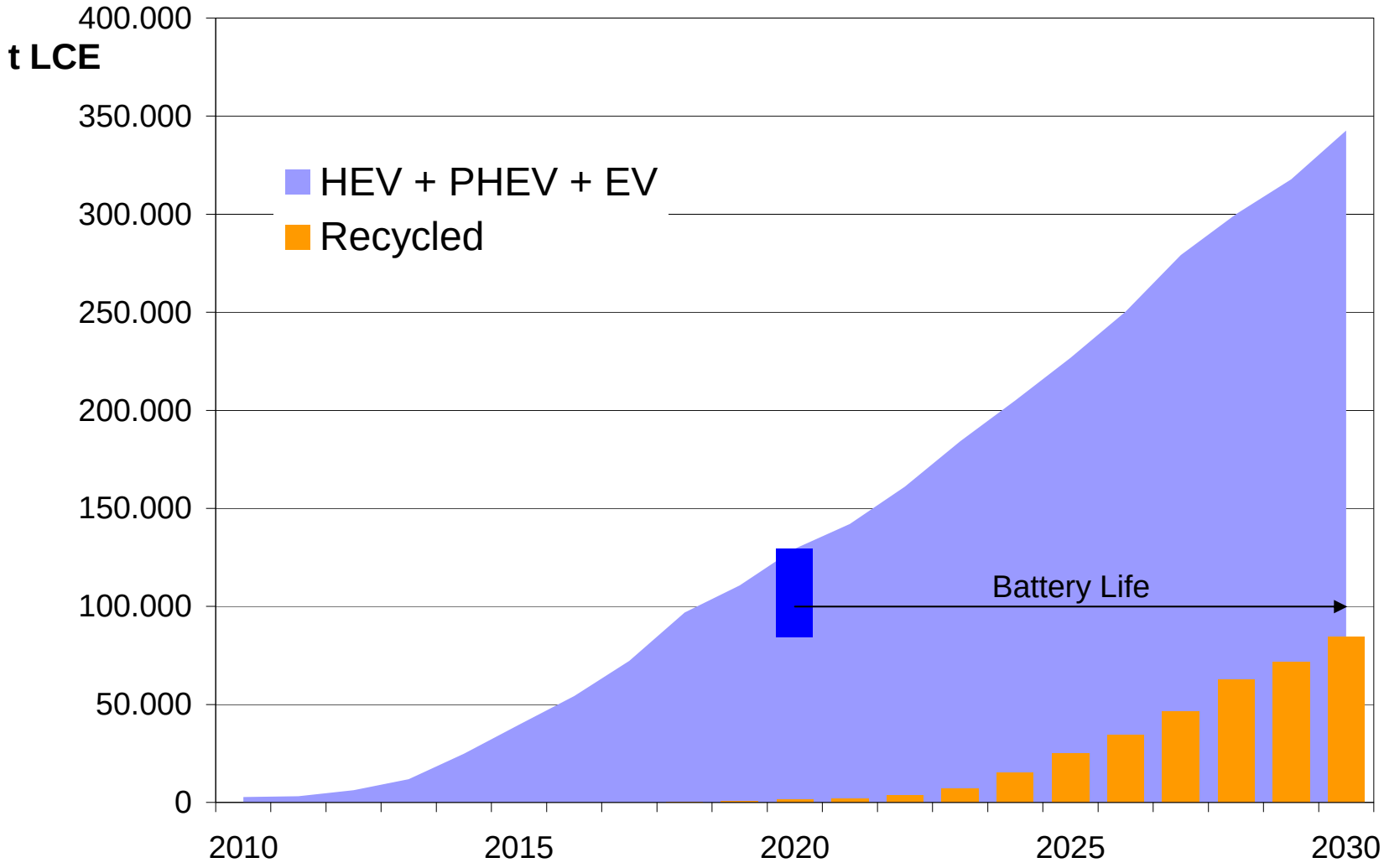
Car manufacturers are key for an optimum recycling system

LithoRec



Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

Recycling Potential (mean scenario) and Timing



Chemetall Lithium Production Potential

Chemetall has steadily increased production in the past and expects to continue to do so in the future to meet market needs.

Expansion plans based on current market estimates

(Salar Atacama; Chile, Silver Peak, USA; Langelsheim Plant,Germany)

	2008	2010	2015	2020
Lithium Carbonate	> 27,000 t	> 33,000 t	> 40,000 t	> 50,000 t
Lithium Hydroxide	> 4,000 t	> 5,000 t	> 10,000 t	> 15,000 t

Chemetall

…the Lithium company

Chemetall as the leading producer of lithium compounds is committed to expand capacities and to develop tailor-made products in order to satisfy its customer‘s demands.