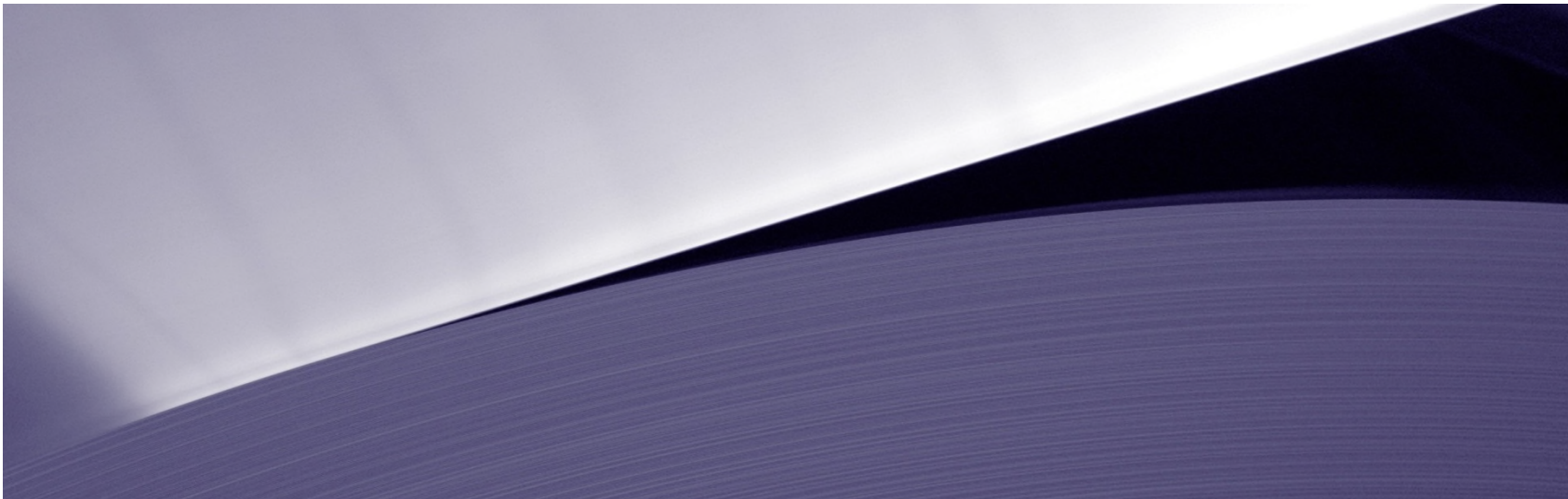


Digital Solutions for Aluminium Battery Industry – Status Quo and Future Concepts

André E. Barten – President & CEO Achenbach Group



Positioning

Founded in 1452, Achenbach, today, is a system provider and a strong brand in the market for rolling mills, foil slitting machines, media systems and digital system networking.

We are the Specialists 

We are Leaders in technology and quality 

We are your Partner 



Designed,
developed and
made in Germany

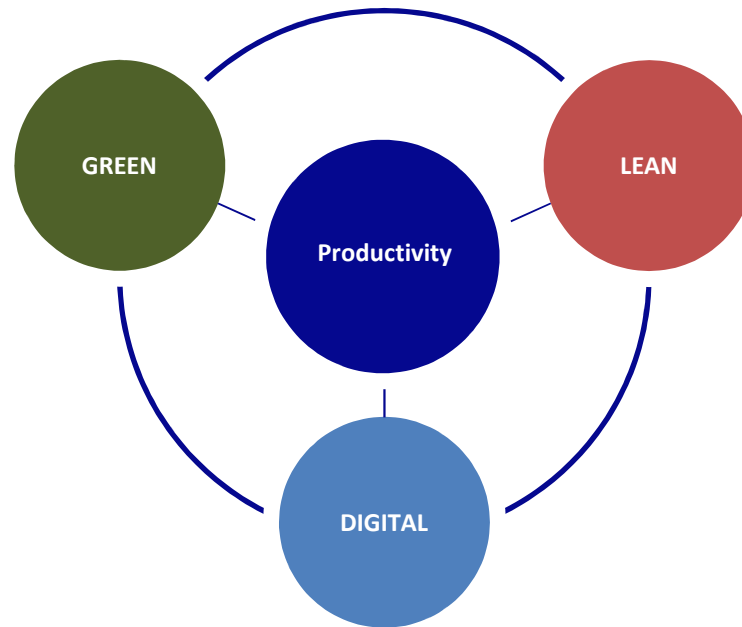


OUR FUTURE = GREEN + LEAN + DIGITAL



- ➔ **#1: How can digital solutions enable sustainable production in a circular economy?**
- ➔ **#2: How can sustainability gains / GHG emissions be measured and reported precisely?**
- ➔ **#3: Sustainable production and products: Outlook on BEV and Aluminium Cathode Foil**

Future Objectives



#1: Example Speed

What is the more energy efficient speed to drive from here to Hamburg?



100 km/h?



or

200 km/h?



...but you might loose 2 hours of your lifetime in the car!

#1: Example Speed

What is the more energy efficient speed to roll e.g. 8079 from 140 to 70 μm?

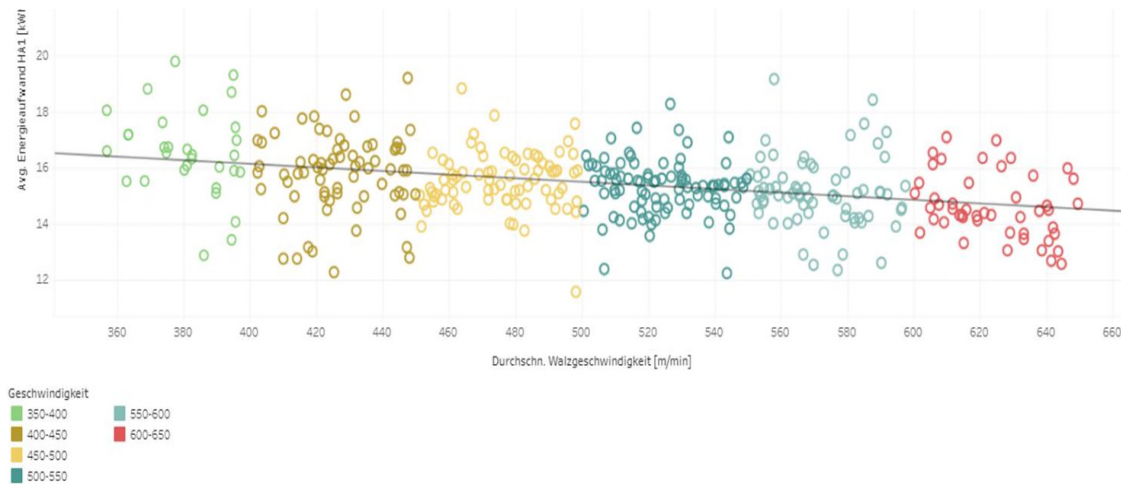


360 m/min?

or



640 m/min?



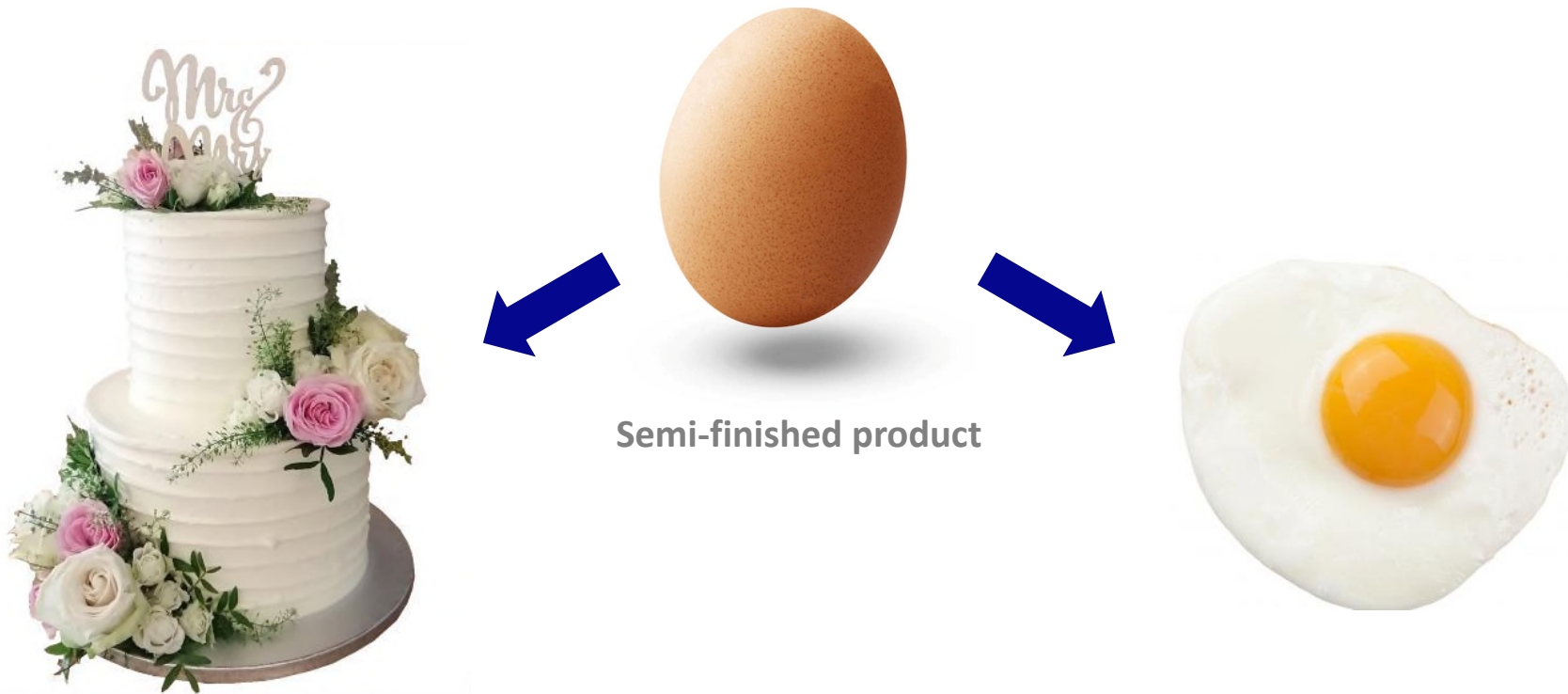
...saving 15 % energy and gaining lots of free equipment time for other products!

#1: Sustainable Productivity

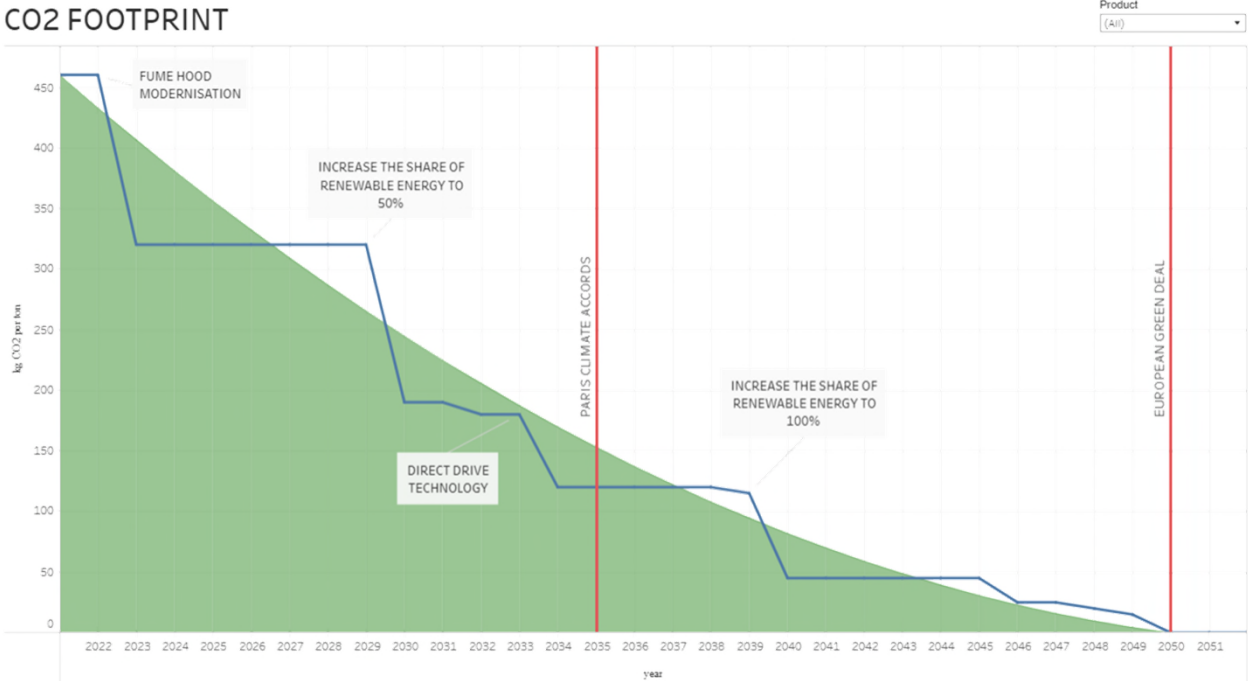
SUSTAINABILITY ONE STEP AHEAD



#2: Example on semi-finished products



#2: Coming from Plant to Product Level on GHG Emissions (CAKE)



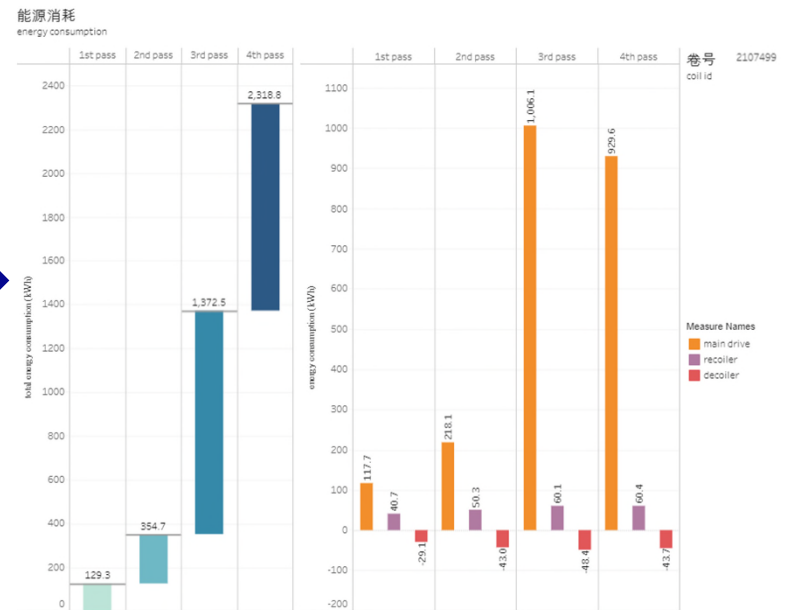
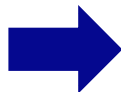
Tracking long time developments and showing the impact of individual actions.

#2: Coming from Plant to Product Level (Eggs au miroir)

Overview of production data for coil ID 2108865:

Overview	Quality	Process	Consumption	Time Charts	Flatness
卷号 (coil id): 2108865	质量 (quality): 8	过程 (process):	消耗 (consumption):	时间图 (time charts):	平坦度 (flatness):
生产状况 (production status): finished	输入重量 (input weight): 8,912 kg	输出重量 (output weight): 8,849 kg	最后生产阶段 (last production stage): The final pass (2x 13.5-6) was rolled on June 26, 2021 using FFM2		
产量 (yield): 99%	质量 (quality): 93%	业绩 (performance): 87%	每吨能源消耗 (energy consumption per ton): 118.4 kWh/t	每吨的生产时间 (production time per ton): 01:00:27	

Information: The input weight was not measured and is only an estimation.



Energy consumption on product level i.e. square meter of specific product.

Prize-Winning Solution

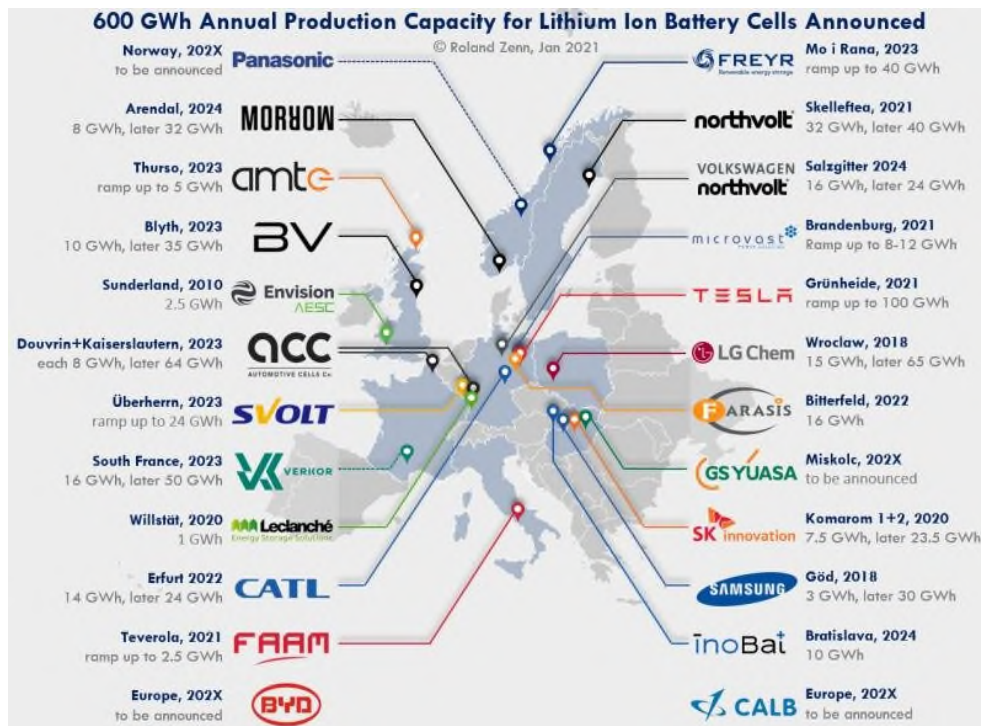
OPTILINK was awarded in the Smart Solutions category of the *Handelsblatt Diamond Star Award Best Industrial Business Solution 4.0*



Handelsblatt
DIAMOND STAR AWARD
BEST INDUSTRIAL
BUSINESS SOLUTION 4.0




#3: Battery Cell Production Europe



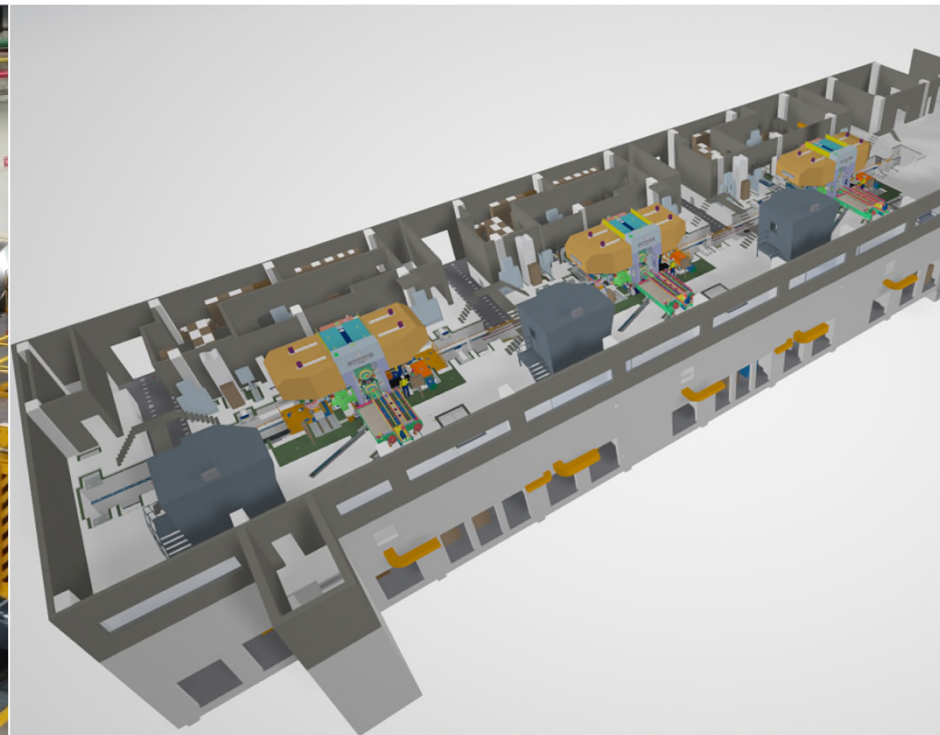
- By 2030 we will have 37.900.000 EVs in Europe (Av. 40 kWh) -> 1.516 GWh (Car Institut University DU-E)
- By 2030 global Capacity will reach 2.857 GWh (SVolt)
- By 2030 Volkswagen will have a BEV share of 60 % (Volkswagen Group Components)
- Range can exceed 1.000 km and fast Charging can be made in less than 10 min (Farasis)

#3: Battery Cell Production Europe



**Meeting future requirements with
best-in-class technology.**

New Opportunities: Battery Cathode Foil Production



Green - Lean - Digital

Productivity

- ✓ Fastest Handling Times enhancing Productivity
- ✓ Widest Foils to maximize Output
- ✓ Highest Productivity with Big Coils
- ✓ Continuous Upgrades & Modernizations enhancing Productivity

OPTILINK

Sustainability

- ✓ Reduction of the fume exhaust energy consumption by 30% with energy efficient fume exhaust hoods
- ✓ Energy savings due to new drive technology with higher efficiency
- ✓ Energy savings with inductive HES for optimum strip flatness
- ✓ Product GHG-Optimization

Thank you for your kind attention!

www.achenbach.de

#TechnologyForFutureConcepts

